IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
Civil No. 10-CV-2734-CCC

IN RE: BIOGEN '755 PATENT
LITIGATION,

Transcript of
Markman Hearing

Newark, New Jersey
January 12, 2012

B E F O R E: HONORABLE CLAIRE C. CECCHI,
UNITED STATES DISTRICT JUDGE

- - - - - - - - - - - -

Pursuant to Section 753 Title 28 United States Code, the following transcript is certified to be an accurate record as taken stenographically in the above-entitled proceedings.

S/Yvonne Davion
Yvonne Davion, CCR
Official Court Reporter

A P P E A R A N C E S:

NICHOLAS GROOMBRIDGE, ESQ.
CATHERINE NYARADY,ESQ.
JULIA TARVER-MASON WOOD, ESQ.
JOSEPHINE YOUNG, ESQ.
MONIKA WROBEL, ESQ.
For Biogen IDEC MA

KEVIN H. MARINO, ESQ.
JOHN D. TORTORELLA, ESQ.
For Biogen IDEC MA.

SUSAN ALEXANDER, ESQ.
MARTHA BORN, ESQ.
BART NEWLAND, ESQ.
For Biogen Idec MA

WAYNE BARSKY, ESQ.
TIMOTHY BEST, ESQ.
AMELIA MARGUET, ESQ.
For EMD, Serono and Pfizer

ROBERT GOODMAN, ESQ.
DAVID BERL, ESQ.
BRUCE GENDERSON, ESQ.
GEORGE BERDEN, ESQ.
For Bayer Healthcare Pharmaceuticals

DAVID DeLORENZI, ESQ.
SHEILA McSHANE, ESQ.
For EMD Serono, Pfizer and Novartis

LESLIE MORIOKA, ESQ.
GREGORY PARKER, ESQ.
For Novartis

THE COURT: We are here on In re: Biogen, the '755 patent litigation. The case number is 10-2734. And before we begin, let's just start with our appearances and then we can discuss how the day is going to proceed. All right? So let us begin.

MR. MARINO: Good morning, your Honor.

THE COURT: Good morning.

MR. MARINO: Kevin Marino on behalf of Biogen Idec M.A. Seated with me counsel table is Nicholas Groombridge of Paul, Weiss, Rifkin, Wharton & Garrison. Also in the courtroom, your Honor, in no particular order, my partner John Tortorella from Paul, Weiss; Catherine Nyarady, Josephine Young, Monika Wrobel. Law clerk Nathaniel McPherson will be doing the presentation for us.

Also your Honor seated in the well, Susan Alexander, the executive vice-president and general counsel of Biogen; as well as Martha Born, vice-president and chief litigation counsel; Bart Newland, vice-president of I.P. litigation for Biogen and our expert witness Dr. David Jackson.

THE COURT: Which is the expert witness? Hello. Welcome.

MR. JACKSON: Thank you very much.

THE COURT: Nice to see you.

MR. MARINO: Nice to see you, your Honor.

THE COURT: Nice to see you as well.

MR. DeLORENZI: Good morning, David DeLorenzi with the Gibbons firm with my colleague Sheila McShane on behalf of EMD Serono, Inc., Pfizer Inc., and Novartis Pharmaceuticals Corp. I am going to allow my colleagues to introduce themselves to your Honor.

THE COURT: All right. Very well. Thank you.

MR. BARSKY: Good morning, your Honor. Wayne Barsky; Gibson, Dunn & Crutcher of Los Angeles. I have the privilege of representing EMD Serono, Inc and Pfizer, Inc. And with me in the courtroom are my colleagues Timothy Best.

MR. BEST: Good morning, your Honor.

THE COURT: Good morning.

MR. BARSKY: And Amelia Marguet. Also with us today, your Honor, from Merck Serono in Geneva is Giampiero DeLuca who is the senior vice-president for licensing and intellectual property of Merck Serono.

Thank you, your Honor.

THE COURT: Thank you very much.

MR. GOODMAN: Good morning, Bob Goodman from Greenbaum Rowe for Bayer. And I am here with, from the Williams & Connolly firm in Washington, D.C., David Berl, seated here, Bruce Genderson and Jonathan Porter.

THE COURT: Good morning.

MR. GOODMAN: Your Honor, also from Bayer, Susan Thatcher Strawbridge Shenae (sic) and our expert witness Dr.

Jeffrey Ravetch is here as well.

MS. McSHANE: I'm Sheila McShane. As well we have Leslie Morioka and Greg Parker for the Novartis Corporation. And with us also is Tim Wiseman who is in the well as well.

THE COURT: Excellent. Thank you very much. Did we get everyone? We got everyone. Okay. Very well.

Well, just by way of background I want to note the following: The parties are here obviously for a claims construction hearing and it's on Biogen's '755 patent which is directed to the drug Avon ex and it's used for the treatment of Multiple Sclerosis. And we are addressing claim Number 1 of the patent. More specifically the meaning of the following: Produced by a non human host transformed by a recombinant DNA molecule.

And I understand through the parties' briefing that you are not only in dispute over the meaning of the terms, but you also have an issue with respect to scope. And I imagine that will be addressed today as well.

And we had an order entered and we had a prior telephone conference regarding how today was going to proceed. I envision it proceeding with the tutorials first and then followed by the argument. But, if there has been any change or discussion with the parties and you want to let me know of some modification to that, I would be fine and happy to listen to that.

Any issues?

MR. GROOMBRIDGE: No, your Honor, we are planning to proceed exactly as the Court had directed in the telephone conference.

MR. BARSKY: Same with respect to us.

THE COURT: Very well. So everyone is in agreement. So if you would like to proceed, I have all the handouts from you folks. So, I think I am ready to go.

MR. GROOMBRIDGE: Thank you, your Honor.

THE COURT: Thank you.

MR. GROOMBRIDGE: I will proceed with the tutorial portion on behalf of Biogen.

And this by way of overview, your Honor, what we would like to do is first talk about the background from which the patent emerged. That's item 1. And then items 2 through 6 what we would like to do here is, if it's not presumptuous, is try to equip the Court with an understanding of what these terms are which we think is probably a good idea as a basis for resolving the disputed issue that the Court accurately captured just now.

THE COURT: By the way, does anyone disagree with what I placed on the record in terms of what the issue is for today? We are all in agreement .

All right. Go forward.

MR. GROOMBRIDGE: So the patent, your Honor,

covers a method of treating diseases with a synthetic version of a naturally occurring protein which we will refer to as interferon beta. And what I would like to do then is just run through these various bullets here and talk about what led up to the emergence of this patent and we will get underway.

So, starting with the history of interferons. Interferons were discovered by accident, like many things in science, in the 1950s. And what interferons are, they are a class of materials produced naturally in the body that help the body to fight viral infection and certain other attacks.

And they were originally discovered in a manner that has some similarity with the discovery of antibiotics. A mistake was made in the lab and it was seen that something had happened that impeded the progress of a virus, and that led to further research. That was in the 1950s.

Scientists over the 1960s and 1970s moved forward trying to understand what was going on. They came to learn that there was not just one compound, but a family of them which got different names. One of them not germane to our discussions today is interferon alpha. But then came interferon beta. And as scientists learned more about this material, they became interested in using it to treat viral infections and cancer and that interest grew and grew.

By the 1970s that interest had reached almost a fever pitch. There was a belief that interferons would be to

viruses, what antibiotics had been to bacterial diseases. That this had the potential to be a miracle drug that would transform human medicine and protect human beings against viruses like influenza in the same way that Flemings' discovery of antibiotics had transformed medicine with respect to bacterial diseases.

Now, the problem with that was that the only source for interferon beta was gathering it from human cells. And the natural product is not made by healthy cells. It's only produced when the cell is attacked by something like a virus.

So the only way to make this back in the 1970s was to collect human cells, samples they might get from hospitals, grow them up in some sort of vessel, challenge them, meaning putting in some kind of virus, causing the cells to produce this interferon as they naturally would, and then trying to collect and purify that.

And the problem with that was that it was very difficult to collect and purify and the material was produced by the cells in tiny, tiny amounts. So that all you ended up with was this material of tremendous medical interest but available only in minuscule quantities at huge cost.

And just to drive that home, your Honor, to illustrate this, I don't know if your Honor will remember this magazine. It's sort of a trip down memory lane. This

particular, this one is the cover of it from July of 1979. And it had an article about interferon. And here is the teaser on the cover, Interferon, Miracle Cure at $22 billion per pound. That's a very graphic illustration of what was going on, that it was impossible to get this material in any form or quantity in which it could really be used.

In fact, it wasn't even possible to get enough for full scale clinical trials. There had been some small clinical trials done which were considered very promising. But, no one could find a way to gather enough of this to unleash its perceived medical promise.

And you might say, well, why couldn't they just make it. The world is full, certainly New Jersey is full of chemical plants making drugs. What is the problem with simply manufacturing this in the quantities in which the medical profession would have wanted it? The problem is this, that interferon isn't like say an aspirin or isn't like the drug Lipitor. Those would be called small molecules. This is a protein. And it's very big and very complicated and very, very difficult to make.

Let me just explain that a little bit more. What's a protein? Well, proteins are the things that make all living organisms work. Essentially in any living organism, whether it's a bacteria, a plant, an animal or one of us, what's going on in the cells of that organism are proteins are

at work engaged in just about every process that goes on in the organism. Every cell contains thousands of them and they are the things that makes the cell run.

In many functions, and the Court might have, I am sure, have heard some of them enzymes, hormones, antibiotics, these are examples of proteins, and we should look here at what a protein is structurally.

Proteins are made up of amino acids. There are 20 different amino acids that can be used to make proteins. The classic way to represent the structural protein at its most basic level -- and I stress most basic because there are, and I think we will hear perhaps from the defendants some more about other aspects of this structure -- the first order, the first level of this is the protein is a string of amino acids joined together. And they are sometimes represented, as we have here, like a string of pop it beads.

Each bead is an amino acid, and there are 20 different amino acids that could be used. So we could have 20 different colors of bead.

And a word that is sometimes used synonymously with protein is polypeptide. There is a potential dispute in this case, or perhaps there is a real dispute that I don't know about, the relationship between protein and polypeptide. For purposes of this tutorial, I am going to try to avoid saying anything that might be provocative to my adversary.

THE COURT: Understood.

MR. GROOMBRIDGE: They are either the same or they are very close. And why they are called polypeptides, well the bonds that join the beads together, if we are going to follow that metaphor, are called chemical, are called peptide bonds. Because there's a lot of them, it's a polypeptide.

Now, I have depicted this as a string. And certainly the basic structure is one joined to the next to the next in a line. But, one of the things that is very important to understand is that in its natural forms in a cell the protein doesn't exist like that. It is curled up or conformed into a very complex shape. And its shape is very, very important because it's the shape of the protein that enables it to do its job. If the shape is wrong, it won't work.

In fact, your Honor, many genetic diseases are caused because a particular protein has some mistake in it that makes it misfold and then it won't work and then that can have traumatic and very bad consequences for the individual involved.

Now, interferon beta is composed, it turns out, of 166 amino acids joined together. So, if we represented it as a string of beads, it would be 166 beads.

This is a standard model. We didn't create this. We took this from the internet. This is what is called a space

filling model. It shows you that the purpose of this, your Honor, was to give some idea of the complexity of the structure. This is the reason why, even back in the 1970s, it was not possible simply to go out and manufacture it, because it is an enormously complicated structure. And in fact at that time the structure in the sense of the order of what those amino acids were and what order they were in was unknown.

Even had it been known, there would have been no means to make it in a chemical fashion. The only way that proteins could be made meaningfully at that time was by harnessing the mechanisms of cells to do the work for you.

And so if we now turn to claim one, what I would like to do is just walk through the claim and talk about some of the concepts here, again not for purposes of argument, but simply to try to put them in the hierarchy of ideas that matters for the purposes of this claim.

We begin with a method for immunomodulation here. The method for immunomodulation involves treating a patient, administering to a patient a therapeutically effective amount of the composition. And then the composition has to include a recombinant polypeptide produced by a non human host, transformed by a recombinant DNA molecule.

So what that's telling us is we are going to make a protein that either is beta interferon or is close enough that it will have the right kind of activity, and then we are

going to give it to a patient.

Now, the Court, adequately, I think quite concisely captured the dispute here. And I think I don't need to dwell on this. The question, interesting in this case, the dispute is not so much of what does "transformed by" mean, what does "produced by" mean, but it's really over who has to do the transforming and who has to do the producing and when.

And ultimately the question is does this have to be done by the same person who administers the drug, or does it have to be done, or can it be done by someone else.

THE COURT: This is a question for everyone and you can certainly address it as it comes up, but my question at this point is to what extent there is actual agreement on the meaning of the words at issue versus the scope. Because we have gone through a significant amount of briefing and the emphasis has changed through the briefs as to what the issue is.

MR. GROOMBRIDGE: Exactly, your Honor. I believe that at this point there is no dispute, certainly no meaningful dispute, over the meaning of "produced by" and the meaning of "transformed by". I think this is perhaps a rather unusual claim construction dispute where we are not talking about what which it is, the two sides agree. But they disagree about the legal consequences of this. And your Honor is entirely correct that the issues evolved through the briefing.

One point I would like to make here is at the beginning of the briefing, there was some to and fro about whether this was even a proper claim construction issue. The defendant said it was, Biogen said it wasn't.

We have come to the point where the issue is fully joined. And we would not want the Court to invest time in deciding that issue. Biogen is entirely comfortable having that decided now. We might as well go ahead and get that issue resolved, regardless of whether it falls into the proper bucket of claim construction or otherwise.

THE COURT: I am going to refer to that here, just so everyone understands, as the scope issue versus the term of the meaning issue. So in terms of the scope issue, it appears that all sides are looking for a decision on that.

Is that correct? Yes?

MR. BERL: Yes, your Honor.

THE COURT: All right.

MR. GROOMBRIDGE: So, we will just go through this and talk about what are the key elements here.

So this patent emerges from this background of how do we unlock the tremendous medical potential, that tantalizing promise of here is a compound that has the potential to be tremendously beneficial in medicine but yet we can't use it because we don't know what it is. We can't make it. And we don't know how it works in the body.

And so what the patent is saying here is first this is a method for immunomodulation. That's one of the ways that we could use it. Immunomodulation simply means that it either stimulates or suppresses the immune system. It's nothing more than that. It could move it up or move it down. And that's what the patent says in this quotation.

The next thing, I will dwell a little more on this, is DNA, because the transformation piece of this involves necessarily an understanding of DNA. So let me just run through that hopefully in a way that will not try anyone's patience.

THE COURT: No, it's fine.

MR. GROOMBRIDGE: So what is DNA? Well, we see there a perhaps crude representation of a cell and we will come back to that. The cell is, in essence, a sac. It has an outer wall, a membrane that contains a liquid phase cytoplasm, although I would think of it as something like soup.

And then in this particular one we see a nucleus with chromosomes which we would find in most human cells, but not all of them, for example. And in the chromosomes are structures that consist very largely of DNA. And if we were to unwind a chromosome, what we would see is a tremendously long strand of DNA.

And DNA in its typical form consists of these two strands wound around one another, the famous double helix. If

we unwind that to make it easier, the structure, what we see is something like a ladder. And the ladder is made up, in turn, of a series of these U building blocks or units called nucleotides. And we see one represented graphically there.

The phosphate part of that is the sides of the ladder. And the other pieces, the sugar and the base, are the rungs of the ladder. And it is the base here that contains the information content of DNA. Because the significance of DNA is that it is --

THE COURT: I'm sorry, where is the base?

MR. GROOMBRIDGE: The base, your Honor, is right here. And --

THE COURT: Where would that correspond to the pictorial?

MR. GROOMBRIDGE: There is four of them and here is how they --

THE COURT: Oh, I see.

MR. GROOMBRIDGE: That's where they fit in. So we go back, what we see on one side of the ladder we have got the side of it, then we have got kind of half a rung here. And what's going to happen is on the other side I am going to get the half rung. And it turns out that of these four bases, it's easier just to call A and T and G and C, A and T like to join together, and C and G like to together. And that is why the two strands attach almost like two parts of a zipper. And in

their natural form they will join together.

And then once they get to be a long enough piece, they will twist around and form that helix. And it is the information content, the blueprint, many people refer to DNA as the blueprint for living things, what it is that that order of A's and B's and C's and T's is what contains the instructions for making proteins and polypeptides that will then go to work in the body.

The patent talks about this and it describes it more concisely and more eloquently than I have done in the definitions piece of the patents there. And I believe that there is no dispute about this, but it's right in there. And we see there a definition, DNA sequence.

Now, polypeptides, we already looked at but just to review the bidding, it's a string of amino acids that are joined together by peptide bonds. And in its natural form they kind of coil up into a shape. And the patent again describes this, it says polypeptide is a linear array of amino acids connected by peptide bonds. Linear array, I just want to call out that linear means that just like a string of beads, it has to be one single strand, not branches. But, it's like a string of beads, if I would drop it in my pocket and coil it up and it would still be linear within the meaning of this definition.

So, how do I get from DNA to polypepties. If DNA is the blueprint, what is the mechanism for putting that

blueprint into practice? And that involves an intermediate step.

The best way I could describe this is to say that DNA is like the file copy of instructions. And in the organism we want to safeguard that file copy because we never know when we might want to go back to it and make another protein from this repository of information in DNA.

So, in order to accomplish that, what we are going to do is make a working copy that we will actually use to produce the proteins. And that working copy is RNA, a closely related compound. We say MRNA is for messenger. And we will see in a minute why it's called a messenger.

We take the information from the DNA, we transfer it into RNA, and then that information is in turn going to be transferred into the sequence of amino acids that make up the polypeptide. And that, those two processes, DNA to RNA and RNA to protein or polypeptide are called respectively transcription and translation. So we can put those in there.

I have a terrible time remembering which is which. And the only way I managed to do it is they are alphabetical, transcription comes before translation.

Now, when we take the two together, the whole process, that is called expression. So again we can label this, the whole process of going from DNA to a polypeptide is called expression, sometimes referred to as a gene expression.

How does that happen? Well, let's go back in to look at our cell again here with the DNA and the chromosomes and the nucleus. We can zoom in there and there is some DNA. Let's assume the cell has decided, for whatever reason, it would like to go to that file copy and say let's make a protein according to the instructions that are contained in this particular piece of DNA.

And the way that that's going to happen, I won't dwell too much on the details, but we will separate it out into a single strand, a particular enzyme, a specific special purpose protein will come along, and that enzyme will assemble RNA so that it replicates the information content of the DNA. It will take similar building blocks. And they are essentially identical except that we, instead of the T, we have a U here. But, for practical purposes, that doesn't matter for this case I believe.

And it will make this RNA that matches and includes information comparable to the DNA. And then the RNA will go on out, it will leave the nucleus and it will go out into the cytoplasm. That's why it's called the messenger RNA. It's carrying a message of information out into the cytoplasm, the soup that surrounds the nucleus. And out in the cytoplasm it's going to encounter something called a ribosome. And a ribosome is basically a factory for making polypeptides and proteins.

Here is how that works. The ribosome will essentially lockout -- and I apologize to the eminent scientists present in the room because I am going to murder some of these concepts -- but it essentially will lock onto this strand of RNA. It possesses the ability to read that information and correlate --

THE COURT: I'm sorry, what locks onto the strand of the RNA?

MR. GROOMBRIDGE: This, the structure called the ribosome which is a sort of complex assemblage of protein and it also includes some DNA of its own. And its job within the cell is as a factory to make proteins. And what it can do is it can take the instructions from the sequence of nucleotides and correlate that to the amino acids that it wants to join together in the right order to make any given protein.

So, understanding how that process works, we have one more concept I want to introduce which is a codon. This is nothing more than a group of three of those ladders. The reason we call it a codon is the three ladders taken together are a code for one of the 20 amino acids. And so what the ribosome -- and that again is defined in the patent -- the way the ribosome works and the codon is produced is floating around in this soup are building blocks to make proteins.

And you might say, I thought to myself well that seems very convenient. But the cell is actually very effective

at recycling. So proteins are not only being created, they are being mucked apart as well. And the constituents can be available to be reassembled if needed.

So, floating around out in the cytoplasm, we have the requisite building blocks. Amino acids that are in essence tagged with, and it's what we call an anti code on something that will enable the ribosome to collect the right amino acid and put it together in the right order. So those ones will match up right there.

And then the ribosome will move along and it will read the next block of three and it will say ah ha, that's a different amino acid. Let me find one of those and gradually it will move forward.

As it moves along it will join them together. It will discard the pieces of transfer RNA that it no longer needs and it will build up a protein like this. And this is how cells work. It's how, in any organisms, how those proteins are created. And as we see as this process continues -- let me see if I can speed this up a little here -- that what begins to happen is the protein -- as it leaves the ribosome, this native protein will already begin to fold up in a double shape.

So that's the mechanism by which we go from DNA to RNA to proteins and we end up with the right sequence of amino acids.

Now, the patent includes the sequence for beta

interferon, and this is Figure 4 of the patent. Let's just blow that up and call out the beginning of those 166 amino acids is right there. We see the first three. And what we have got is the first three happen to be an amino acid called methionine which is abbreviated MET, then serine which is abbreviated SER and tyrosine abbreviated TYR.

And underneath them we see that group of three DNA basis that is the code for each one of them. The patent then has the whole sequence for all 166. There is the last part of it. And if we follow that, what we would find at the end of all of this is that if we can get that DNA into a cell and have the cell or the cellular machinery, the ribosomes, do their job, this is what we would get.

Now, the cell is what's going to be referred to as a non human host. And hosts here just means a cell --

THE COURT: Go right ahead.

MR. GROOMBRIDGE: No problem. The host just means a cell whose machinery we are going to harness to make these proteins and the patent gives a number of examples. Most commonly they could be bacteria such as e-coli, a name that's mostly known to us in less beneficial contexts, or they could be animal cells. The patent gives examples of, for example, monkey cells could be used for this.

The patent makes the point, the scientific point, that there is no reason that they should not be human. The

reason the patent says non human host cell is a legal, not a scientific reason. Because we have decided as a society that it is a good idea not to have patents of humans. It's called bits of human. That's why it says non human host cell. But essentially this could be any kind of cell that we can harness to make the desired protein for us.

And the way we would harness it to do that is through this transformation and the recombinant DNA molecule. I will explain those two together because they can vehemently fall into one piece.

Here we see a strand of DNA, the double helix. So, some part of this --

THE COURT: Let's just, let me ask you a question. In terms of this strand of DNA or the sequence of amino acids that we are dealing with here, is that a sequence that was just discovered? Had it been previously discovered? What is the history of that?

MR. GROOMBRIDGE: So, the history of this, your Honor, is the sequence of those 166 amino acids was not known. Now, one of the frankly major facts in this case is that there was several teams of scientists around the world racing with one another to try to decipher that sequence. And who did it first is, I suspect, going to be an issue in this case. And I will talk a little bit more about that and I will be very surprised if we don't hear about it from my learned colleagues

here.

But, putting aside the work of these groups of scientists who are in this race, the rest of science did not know what that sequence was. And one of the things that actually was important was a group of scientists, completely unrelated to these, in the Fall of 1979, published a sequence that was the first 13 out of the 166. They hadn't been able to get past that.

THE COURT: When was that?

MR. GROOMBRIDGE: That was, it was first made known to the world in a conference in New York in October of 1979. And then it was subsequently published in a leading scientific journal in January of 1980. And that became a fact that helped the folks who were in the race that actually took that piece of information and said ah ha --

THE COURT: It's a point of departure.

MR. GROOMBRIDGE: It's a point of departure. So, now recombinant DNA, what recombinant means is that we have recombined it. Before we can recombine it, we have to uncombine it. So, the details of this are certainly beyond anything that we need to delve into, although there is a great deal of detail should we wish to.

But, we can take a piece of DNA and we can cut it. One of the tools that was available in the toolbox of the molecular biologist at that time was something called a

restriction enzyme which is like a pair of molecular scissors. But, it doesn't cut the DNA anywhere. It only cuts in a particular place when it encounters a specific sequence. So it would be that this particular pair of scissors looks for C,C,G,A,T. And if it finds that sequence, it cuts.

And because I know that, I can use that to excise out, to snip out sections of DNA that I am subsequently going to work with. And that's what we have shown here. We have cut one out. And then what we would do with it in this transformation process, the next thing, the next concept that may be important is something called a plasmid. A plasmid is a, typically a circle with DNA, double stranded DNA that has the capability that it can be put into a cell. And when it's put into a cell, as that cell reproduces, the plasmid will reproduce and the progeny --

THE COURT: Is that the DNA running around in a circle?

MR. GROOMBRIDGE: That's the DNA running around in a circle joined up end to end. And this, the significance of this is this is a vehicle by which I can insert DNA into a cell. So that the transformation is the putting that DNA into the cell. The recombination is then this -- that's the definition of plasmid. I won't go on that.

If the Court sees in the patent these figures, circles, they are all plasmids. And the purpose of this is

just to say this is a particular one that they were working with. But, what I can do is, using those molecular scissors, I can cut the plasmid and then I can splice it into the piece of interest there. And now what I have got is a recombinant molecule because I have recombined this with a foreign piece of DNA, and that again is defined here.

And now that recombined piece is something that I can put into a cell. And that's the step of transforming in the language of this patent. And I introduced that into a non human host cell and now I have a transformed non human host cell. And if I do this in the right way -- the cell is a living organism.

If I treat the cell with appropriate care and affection and I feed it, it will multiply, just in exactly the same way that if I go home after I have been away and my kids are at home I may find cheese in the refrigerator on which cells have multiplied.

This one will multiply. And as it multiplies, it will, each copy, each descendent will have the same foreign piece of DNA in there. And so because bacteria in particular grow at a prodigious rate, this gives me a way to make vast quantities of these transformed cells.

Now, again, if I treat them with appropriate care and attention under the right conditions, and that could be non trivial, but under the right conditions I can persuade the cell

to go through that process of DNA to RNA to protein and I can harness its machinery, its ribosomes and such like to make protein out starting with this foreign piece of DNA that was never in the cell, but it's the one thing I am interested in that I have transformed it with. And it will produce the protein that I am looking for.

And because I can grow vast quantities of these cells, I can now produce this protein in far greater amounts. Still a difficult process with a lot of steps to it, but I can get it in vastly greater amounts than would have been possible. And to come back full circle then what I would do with that --

THE COURT: Now, is that something that you would have to do from time to time? Or based on that process being performed once, would there be a sufficient result?

MR. GROOMBRIDGE: So typically, your Honor, what you would do is the process of manipulating and recombining the DNA, you would do once. And, in fact, the Food and Drug -- if you are going to sell this as a drug, the Food and Drug Administration if you started doing it again would say we have to go back to step one and get a new approval.

So typically what you would do is you would manipulate this and you might have a number of experiments. But, when you found one that you liked, what you would do is then you would guard that jealously and that would be -- and you would create a cell line with these transformed cells. And

the way you would manufacture the protein is you would grow up in an industrial reactor, batches of this. But they would all be genetically identical copies of that original one that you had transformed. And this is what is shown here is you would grow them up --

THE COURT: So it contemplates doing the transformation only once.

MR. GROOMBRIDGE: That's what would be contemplated by the nature of this invention. You would do the transformation. You would then have this organism that you can use as your source. And when you would then cultivate that into living things, you would make sure you don't want it to die, and as you want to produce the protein, you could grow up batches of it, persuade them to produce the protein, and then purify that. Depending on what kind of cells you use, they may secrete the protein, or you may have to destroy the cell to get it out.

But, they will produce it and you can take it and purify it because you have it in a quantity that far surpasses anything that you would get from the natural source. And ultimately that's what we are looking for at the end of the day, to harness the medical potential of this. We want to be able to get this stuff in a pure form. And that's what the goal of the patent was.

So to come back full circle, we take that then

that we have produced in this fashion and administer that to a patient. And that is the subject matter of the patent here that it was directed to, is how do we deliver on these glimmers of hope that, you know, these frustratingly great glimpses that we have of a radical new drug that we just can't get to. And the answer is well, here is a technology that will enable us to do that.

Now, this is merely the backdrop to it. Of course the issues about well, is there a difference in terms of patent law between the process and the medical use of it. Issues, I would say, for the argument piece of this. But this is simply the backdrop from which this invention emerged. And that concludes our portion of the tutorial.

THE COURT: Excellent. Thank you very much. Thank you.

Who would like to go next?

MR. BARSKY: Thank you, your Honor. Wayne Barsky again.

THE COURT: Thank you.

MR. BARSKY: First I just want to invite the Court at anytime, as it has already, to interrupt and ask any questions. I would much rather direct my comments to matters of interest.

THE COURT: That sounds fine.

MR. BARSKY: So the Court can go through a canned

presentation which will, in many ways, replicate some of the materials that the Court just heard from my friend Mr. Groombridge.

THE COURT: I am sure we will have a very detailed legal argument later too. So I understand that this is the more quiet section of today's presentation.

MR. BARSKY: I am guessing that's right, your Honor.

I am going to cover three principle subjects. And those are really the state of the art in 1980 at the time that the very first application was filed by Dr. Fiers in the U.K.

The U.S. application was actually filed a year later in 1981 in the United States. But, the very first one was filed in the U.K. in April of 1980. So we are going to talk about the state of the art at that particular time. And you will see that many of the things that I have to say will cover some ground that has been covered --

THE COURT: Which is fine.

MR. GROOMBRIDGE: -- already. And I am only going to cover the two issues which I think your Honor has already probably noticed are going to be the focus of the claim construction portion of our discussion that will come later. And that is the process of transformation and the process of production. These are the claim terms that your Honor identified right at the beginning of our hearing.

THE COURT: And I have read all of your briefing and I am very familiar at this point with it. But I appreciate whatever light you can shed on that.

MR. BARSKY: Great, because that's at the epicenter of the ultimate dispute here. So I am going to focus on those two things.

But I thought I would start by giving a little bit more of a response to a couple of the questions that your Honor asked. The first was the question of scope. And certainly it's correct that it sounds like we all want the Court to address the issue of scope. That's really what is at issue here. Because we do agree fundamentally on what it means to transform a host cell with a recombinant polypeptide and to produce a recombinant polypeptide from a transformed cell at bottom.

THE COURT: When we get to the argument section, I won't waste the time now doing this, but I would like to more further explore the specific agreement you might have as to the exact terms at issue.

MR. BARSKY: Sure. We certainly --

THE COURT: Again I understand the overarching issue of what I am determining to be the scope. And then we can get into some of the existing case law and how the parties rely upon that.

MR. BARSKY: Certainly, your Honor.

And in Biogen's slides, and it's in slide 18 in the book that was provided to you, we suggest on this issue of scope, the question was posed in that first bullet point, and I will pause so you can get it --

THE COURT: Go ahead.

MR. BARSKY: The question was posed by Biogen that the dispute is, are "produced by" and "transformed by" steps in the claimed methods. And your Honor identified this as the scope issue.

And then the second bullet point talks about what Mr. Groombridge described as well, if so, who needs to do it. Who needs to perform those steps, and when. And we are obviously going to be addressing those issues.

So the way we would frame the issue, and we are going to talk about this a lot more later so I will be very quick before I move on, is that whether or not these are processes that are required by the claim and required to be performed in order to practice the claim. That's one aspect of the scope issue.

The second aspect of the scope issue, and this will be addressed to, particularly by Mr. Berl during his presentation later today, is the issue of, that Mr. Groombridge also raised, which is who needs to do it and when and what does the case law say about that. So that's the first point I wanted to make.

The second point or question that your Honor raised was about the history of the DNA sequence for interferon beta. And you were told by Mr. Groombridge correctly that the first 13 amino acids were identified in October of 1979, and that those and that that sequence was published in January of 1980.

What I would like to do is just take two minutes to just finish the story and give the Court the punch line here. The punch line is as follows: A researcher from Japan by the name of Taniguchi who was affiliated with an organization called Sugano was the individual who first identified the complete and accurate DNA sequence interferon beta.

He did that by the end of February of 1980 and he circulated that sequence to hundreds of molecular biologists throughout the world in the period of late March and early April of 1980. And now I need to slightly correct something I just said. I said that he, Dr. Taniguchi did it. Actually Dr. Taniguchi provided his sequence to a scientist named Weissman who is a co-founder of Biogen and Dr. Weissman circulated that sequence to hundreds of scientists throughout the world during that period of time.

Mr. Groombridge raised the point that we might dispute the question of or we might have something to say about who was the first to identify the complete DNA sequence for

interferon beta. Actually, your Honor, the federal Circuit has already resolved that issue. Because there was a proceeding called an interference among three scientists named Fiers, who is the inventor of the '755 patent; a scientist in Israel named Revel, R-e-v-e-l, and Sugano, affiliated with this Dr. Taniguchi. And there was a contest in the United States Patent Office as to who had the priority of invention with respect to the DNA sequence for interferon beta.

That proceeding was resolved in favor of Sugano based on the work of Taniguchi, and the federal Circuit affirmed that decision in 1993. So there is actually a federal Circuit decision that resolves the very issue that your Honor raised earlier today, namely this priority of invention.

THE COURT: I am sorry you are saying when was that? What year was that?

MR. BARSKY: 1993. Actually that decision, I believe, is actually quoted in one of the six briefs that was filed in this case.

THE COURT: I believe you're right.

MR. BARSKY: All right. So I promised the Court that I would cover these three subjects. I am going to do it quickly. My prepared remarks are about 15 minutes, your Honor. And then I am going to turn it over to Bayer and Novartis and we may hear from Dr. Ravetch on some of these other issues as well.

THE COURT: Sounds fine.

MR. BARSKY: I know that was a long warmup but now I am going to start my presentation.

THE COURT: All right. Go right ahead.

MR. BARSKY: First, you have already heard from Mr. Groombridge that interferon, the interferons as a class were discovered in the 1950s.

One interesting fact that I don't believe Mr. Groombridge covered, but I expect he will agree with me on, is that the interferons are proteins that have the function of carrying signals to other cells. And the signal that interferon carries to other cells is that there is the potential or looming invasion of a virus or some other pathogen such as a cancerous cell. This particular cell has a name, or excuse me, this particular protein has a name. It's technical. It's called cytokine.

But, the point here is that you can think of interferons generally and interferon beta in particular as kind of the Paul Revere of proteins. Because when the cells are exposed to a viral invasion, the cells are induced to express or produce interferon beta which then carries the message to surrounding cells that they should expect and prepare for and guard against a viral invasion or some other foreign danger to the cell.

By 1980, certainly at the time that the

application was filed here, interferon beta had been identified as an important and promising protein within the interferon family. And as the patent makes clear, it had been extensively purified and characterized and the scientists were excited about the potential that interferon beta presented for controlling viruses and tumors. And this is all reflected in the text of the '755 patent. I believe it's in the section entitled Background for some of the invention.

You saw the Omni Magazine cover from 1979. Well, here is a Time Magazine cover from March of 1980 to give you an idea just how much the interferons had, by this time, made an impression on the public consciousness.

And, once again, what was being experimented with at the time, and even used in small scale clinical studies, was something that you will see in the patent is referred to and you will hear during the course of today's presentation, it was native interferon beta. It's sometimes called in the literature, I think in the patent as well, authentic interferon beta. And this is to signify that this is the interferon beta that is produced by the cells, by human cells naturally. It's the naturally occurring interferon beta that's produced when those cells are facing that viral challenge.

THE COURT: How effective is this on cancer at this point? I know we are dealing with this as a Multiple Sclerosis drug, but just out of curiosity, what has resulted in

the treatment of cancer through the application of this?

MR. BARSKY: Interestingly enough, your Honor, I think it's fair to say as follows: The interferons as a class, and interferon beta in particular, did not live up to this enormous promise and hope that the scientific and the medical communities had in 1980. And I would really just prefer to leave it to some of the distinguished scientists who are here today to talk about specific applications for cancer.

THE COURT: That's fine.

MR. BARSKY: But, it is certainly not a treatment that is approved in the United States by the FDA, for example. And I am not aware of any widespread use of the interferon beta to treat tumors or cancer, despite the fact that it did show that it had --

THE COURT: No problem. It showed some promise but it hasn't really fleshed out.

MR. BARSKY: That's my understanding, your Honor.

THE COURT: Okay.

MR. BARSKY: All right. So, the problem as you already heard and as is reflected in the patent is that native interferon beta, authentic, the natural, naturally-produced interferon beta is only produced in infinitesimal amounts in some cells of the body and in some circumstances.

So, as Mr. Groombridge told you earlier, and absolutely correctly, there was precious little of it to go

around. And as a result, there was an enormous interest in finding a way to create greater availability of quantities of interferon beta.

And at the time the principle technology that scientists and the medical community looked to to solve this problem of limited supply was recombinant DNA technology, and your Honor has heard a lot about that and read a lot about that already.

So I will just summarize it as a pretty neat technology that allows you to take some human DNA that codes for a protein of interest and put it into a non human cell such as a bacterium, e-coli you will hear discussed later today, take that human DNA that you are interested in, put it into a bacterium and then use that bacterium, that population of cells, to produce the protein that you are interested in.

Perhaps, I'm sorry, perhaps that protein of interest is insulin. By 1978 we had proof of concept -- excuse me, by 1977 we had prove of concept for the utility of recombinant DNA technology because it had been used to produce an important protein called somatostatin in 1977, again in a bacteria e-coli.

In 1978, we were able to use recombinant DNA technology to produce insulin in bacteria. Insulin is a protein that is necessary to all human life and it was in terribly short supply. The medical community was actually

looking to animals and to pancreases of animals for to obtain insulin, and there was only a limited supply.

So, all three of these proteins, insulin, somatostatin, and human growth hormone, by 1980 had been produced in bacteria and e-coli. It turns out, your Honor, that e-coli is a very friendly bacteria for cell biologists. Because as we will hear in a little while, it has this ability to simply take that human gene, absorb it into its own genome, its own DNA, and then produce it as if it were -- as if it was its own DNA. And that is why, particularly in the early days but even today, e-coli as a bacteria is so popular.

As a result of the fact that we had this terrible shortage of interferon beta on the one hand, and this very promising technology recombinant DNA technology that had been proven to produce human proteins on the other, you had this worldwide race among scientists to first clone and then express -- and I am going to define both of those terms in a moment -- but to clone and then to express interferon beta in bacteria.

And at that time it was bacteria, although there are other non human host cells that have obviously been used to produce human proteins.

Those scientists were located all around the world. Dr. Goeddel is not in New Mexico. He was actually somewhere over here in San Francisco, it just looks like that

on our map. Sugano and Taniguchi were located actually in Japan. But, Dr. Taniguchi was actually working in Harvard beginning in January of 1980. And Professor Michelle Revel was at the Weissman Institute of Science in Israel. Dr. Fiers was at the University of Gent in Belgium.

And your Honor may remember I mentioned this three-way interference among scientists who were competing to establish priority to the DNA sequence of interferon beta. That was Dr. Fiers who was affiliated with Biogen; Professor Revel from the Weissmann Institute, and Sugano located in Japan and working through Taniguchi who was then at Harvard. So, we have this worldwide race to clone and express interferon beta.

This brings me, your Honor, to the portion of my presentation about transformation, because it's one of the key processes that is at the core of our discussion here. What is transformation? It is the first or it is one of two steps, let's say, in the production of our recombinant protein.

What one does, at a very high level, is take genetic material from a human being, from human cells, you isolate the human gene that you are interested in, perhaps it is the gene coding for insulin or gene coding for interferon beta, whatever it may be, and then you cause that genetic material to be absorbed by or taken up by another organism, in this case this attractive depiction of a bacterium. Now, at a high level is this notion of transformation that you are going

to hear about.

The second process you are going to hear about is production. So, you start with that bacteria that has been transformed with the human gene that you are interested in, and then you grow, as Mr. Groombridge said, you feed that transformed cell, you create a colony of cells that all have a copy of that human gene that you are interested in.

And then if you have done your job right, if you have built in the proper switches to turn on the expression or the production of that protein, and you will hear about that from Dr. Ravetch in a moment, if you are lucky at the end of the day you get a protein which can then be separated from this bacterial colony purified and then used to treat people for whatever condition it is you have isolated that protein.

THE COURT: Do you believe then the transformation occurs once as well as plaintiffs?

MR. BARSKY: Yes, it does. It only occurred once. And, in fact, just by way of background, I can't speak for Bayer, they will have to address this themselves, but certainly with respect to Serono and the transformation that allows Serono to today produce Rebif, that occurred many years ago and long before the patent.

THE COURT: What year did that occur?

MR. BARSKY: Pardon.

THE COURT: What year was that?

MR. BARSKY: If it's all right with your Honor, I will actually defer to Dr. DeLuca because he will know exactly when that occurred.

DR. DeLUCA: Transformation was made in about 1981.

THE COURT: 1981. Thank you.

MR. BARSKY: So, let's drill down a little bit on these two processes of transformation and production.

I said before that this one of the first early steps is to isolate or clone the gene that you are interested in, the insulin, somatostatin, whatever it may be. What does that mean? It means you have to identify, out of this massive human genetic material, billions of nucleotides. Tens of thousands of genes, where the gene that you are interested in begins and where it ends.

And as you heard already, the basic building blocks, the nucleotides, the amino acids for the proteins, but the nucleotides are basically all the same. It's a defined set. And so to be able to isolate or clone that gene is this first step in this process of transforming a host cell.

So here we have shown that the isolation of the gene of interest, that gene that codes for the human protein is then placed in this circular piece of bacterial DNA and that has, it's called a plasmid. The human DNA is this darker section. And the rest of it is just this ring or circular

piece of self-replicating DNA. You then cause that plasmid to be taken up or absorbed, in this case, by bacterium. And by doing so you have now taken that human gene and placed it within the genome of the bacteria.

Your Honor is going to see in the patent, in the file history and perhaps here during the course of the discussion today, the use of the phrase heterologous to describe both the DNA itself, as well as the host. Here is what I mean by that. All heterologous really means is, in this context, is it's a different DNA.

And so when a DNA molecule, for example, that circular plasmid we looked at earlier, when a recombinant DNA molecule combines both bacterial DNA and human DNA, it is often referred to as a heterologous DNA molecule.

Now, we call this recombinant, your Honor -- perhaps it's obvious but I will just state it -- we call it recombinant because what we have done is what have combined or recombined this human DNA with the bacterial DNA in this plasmid.

So you cause that to be taken up by the bacteria. And now once you have done so you have what is referred to also in the patent and the file history as a heterologous host, which is simply this notion that you have a host cell that is supporting both its own DNA, as well as this foreign DNA, in this case human DNA.

Now, let's just drill down a little bit more on production and then I will be done. We started, of course, with that transformed host cell when we placed the plasmid containing the human DNA into that bacteria. So you have that transformed host cell. And we talked about growing it and producing the, ultimately at the end of the day if you are lucky and you have done your job right, producing the protein.

Let me see if I can summarize in an extremely high level what you heard from in greater detail from Mr. Groombridge and which we will also hear from Dr. Ravetch, which is that all polypeptides or proteins are essentially produced with the following sequence: It's the, you go from DNA to MRNA to polypeptide or protein. At least in recombinant DNA technology that is the sequence that is followed.

And so here what this is going to depict is the -- and I am going to stop this for one second if I can. So you start with these bacteria. You have grown them. And if you have done your job right, what happens is that that piece of human DNA, just like the bacterial DNA, is going to be transcribed into what's called this piece of MRNA called an MRNA transcript. That MRNA transcript is then translated into a polypeptide.

Was that fast enough? Let me see if there is a way I can stop this. But this is a high speed version of what you saw the slower speed version of earlier.

But, to what we are seeing here is that this transcript, the MRNA transcript, what's missing is the ribosome that, among other things, is the ribosome that Mr. Groombridge pointed to earlier. But, this MRNA transcript is used to build the amino acids which link one to another in sequence and form a polypeptide.

Now, the very last -- and this is the obviously the animation of that occurring. In summary, you start with the transformed host cells having the human DNA of interest. That then is transcribed into MRNA. And the MRNA is then used by the cells' machinery, by the bacteria, in this case the bacteria's machinery, to build this linear array of amino acids.

Now, my last comment is the following, Mr. Groombridge mentioned perhaps there would be some discussion about whether a polypeptide is the same or different than a protein. There is no question that in the art today those terms are sometimes used interchangeably. But there is really no need to have any dispute about it for purposes of this claim construction because we have stipulated to the definition of a polypeptide.

And what we have stipulated to was the definition that can be found at column -- I have lost my notes -- but I believe it's column 8, lines 61 to 64.

And in the case of the '755 patent, and this isn't

important for the claim construction obligations that the Court has to shoulder today, but it is important for the case to know that the patent has a very specific definition of the term polypeptide. And it is not that definition that makes it interchangeable in all respects with a protein.

With that I will conclude and turn it over to my friends from Bayer Novartis.

THE COURT: I'm sorry, you are going on behalf of?

MR. BERL: Your Honor, you have already heard two presentations relating to transformation production. We had planned to have Dr. Ravetch present those concepts as well.

If your Honor would find that useful, we would be happy to have him do so and answer any questions you have. If it's not worthwhile for your Honor, if you think --

THE COURT: If there's something that he would like to add that's different, I would be happy to listen. If it's more of the same, I think I have a handle on what's been presented.

MR. BERL: Why don't we have him present just one clarifying issue.

THE COURT: Whatever you feel is appropriate is fine with me.

MR. BERL: Okay. Thank you very much.

DR. RAVETCH: While we are getting the presentation set up, I just wanted to give a historical

background to recombinant DNA story.

When I started my Ph.D. in 1973 at the Rockefeller University, none of this was possible. We couldn't isolate a gene from a mammalian cell. We couldn't clone it. We couldn't express it in a heterologous cell. We couldn't even sequence it.

So this technology has really evolved in the last 40 years, and we now take it for granted because it's so incredibly powerful. But, it represented the synthesis of many scientists working for many years starting about in the fifties on bacterial genetics and on biochemistry that coalesced in the '70s the early to mid-70s to recognize that a technology was possible that would allow the interchangeability of these molecular entities, DNA from one organism to another. And that was quite a breakthrough.

It was really not anticipated that even though DNA seemed to be the same in all different organisms, that it would be recognized by a bacteria as its own.

THE COURT: Now, would interferon be present in a healthy person?

DR. RAVETCH: Interferon beta can be found in low concentrations in healthy individuals depending upon the normal homeostatic mechanism. So, the way interferon works in the immune system is as part of the regulatory circuit and it's able to modulate.

THE COURT: So, would it be present even if not challenged with something?

DR. RAVETCH: It can be. It depends upon the exact circumstances. So, to say we are not challenged, we are always being challenged. We live in a world of soup of microorganisms and we are constantly maintaining this kind of balance between responding in a productive way, and over responding in a pathogenic way. So that these mechanisms are all balanced on a knife's edge.

I think we are going to slide five. So I wanted to clarify really one point. As I said, you have heard about all of this technology, but I wanted to just talk a little bit about polypeptide and protein. Not that there is a dispute because the patent makes it very clear what's meant.

But, as you heard this process of transcription and translation gives rise to a polypeptide. And the patent makes it very clear that a polypeptide is a linear array of amino acids linked together in a certain -- in the polypeptide bond fashion. And when the word "linear array" is meant, is used, it really shouldn't be misunderstood to imply a structure. It's not a rod. It's not a string of beads. What it is is a sequence of amino acids that's absolutely specified.

Can you go back please? Absolutely specified by the DNA sequence. And because of that interchangeability, it's actually possible to not only go from DNA sequence and predict

what the polypeptide will be, but to go from the polypeptide sequence and work backwards and write out a DNA sequence that can encode that polypeptide.

And the patent actually addresses that in the elements of the claim. I can't really see what the -- it's called A. All right.

In Section A of the claim it talks about DNA sequences derived from certain plasmids that have the capacity to hybridize other sequences. That's a way of saying that you can have a certain degree of mismatch between the DNA sequence that you are starting with, and the sequence that you are picking up.

So it gives you a population of sequences. And it says in the end that you could have degeneracy of the code. So without going into much of the detail, the code that specifies a particular amino acid is not absolute in most cases. You could have several codons all specifying the same amino acid.

In the case of glycine, there are six such codons. In the case of methionine, only a single codon. But, it means that there are six different ways you could write out the code for methionine, which means that you can actually pick up different DNA sequences that might all encode methionine.

THE COURT: You are saying you can write out the code in different ways?

DR. RAVETCH: You write out the code for the polypeptide. There's only one way to write out the polypeptide sequence, that is the linear array of amino acids. But, there are multiple ways you can write out the DNA sequence and by extension, the RNA sequence, that will give rise to that polypeptide sequence.

So, the polypeptide represents what we also call in the art the primary sequence, the primary structure. So, we have different designations for the degree of structure a protein will adopt. And the first structure, if you will, is not a structure. It's simply the sequence. And it's called the primary structure.

So the polypeptide is the primary amino acid sequence. And as you saw from the patent illustration of the figure showing the sequence of beta interferon, it's written out as a linear array, linear string of amino acids corresponding to a linear string of nucleotides specified as codons.

What happens after that, how a polypeptide starts its folding process and its maturation process is what gives rise to the biologically functional molecule. So, just because you have a polypeptide sequence, doesn't always mean it's going to function for its intended purpose. It can change because this folding process involves a variety of different steps that are required to create this specific three dimensional

structure that confers its function.

THE COURT: So, you are saying it must fold upon itself.

DR. RAVETCH: In order to preserve its function, it must fold upon itself. And in some cases other things can happen to it after it's folded and I showed on this slide the addition of sugars to it, for example.

This is a process called glycosylation. It's a very common process in mammalian cells. It doesn't occur in e-coli. It's a very rare process in prokaryotes and that kingdom. And this glycosylation can be important or it can be irrelevant.

In the case of beta interferon, the patent told us that if you remove the sugars, you still retain activity. So, we presume that the glycosylation therefore is not important. But, it can cause structural differences on protein as well. There's some other things that as example of some of the things that can happen to polypeptide in the protein molecules.

So proteins will always have polypeptides. The polypeptide isn't changed by the folding or by the glycosylation. It's still a polypeptide. What has happened is that it adopted specific shapes and can undergo specific processes that are posttranslational after you have made a protein that could effect its function.

So that's, I think, a subtle point but in the

business of molecular biology, it becomes a very important point.

Let's go ahead just to the recombinant DNA and just to clarify a few points there. Move ahead, please. This is a hybridization I told you about. We can skip ahead, unless you have got any questions about this process.

So you heard about the recombinant DNA, how you take these little circles of DNA which are naturally found in bacteria. They were identified because they confer antibiotic resistance. And that was a major step that Boyer and Cohen identified that really enabled the recombinant DNA technology that these are autonomously replicating, they can make copies of themselves, they can live within bacteria and they can be moved into bacteria.

And the surprise was you can take a foreign DNA, human DNA, insert it into these circles, another -- those enzymes were the contribution of Paul Berg (ph), for example, and another major breakthrough in this field. So we are kind of naming our process as we go along. But each one led to the enabling of a technology that allowed for these molecules to be created. Next slide.

But, what was, I think, a surprise was that you can take those combinations of bacterial DNA and human DNA, insert them into, for example, bacterial cells by the process of transformation and the DNA would not only be taken up, but

would be replicated. It would be recognized by all the bacterial machinery, the enzymes that replicate DNA in the bacterium as if it was one molecule. It didn't distinguish between the human and the bacterial DNA sequences.

And it tolerated it quite well so you can identify a host cell that was now transformed by this DNA and that could be grown up, as the next slide I believe shows, into a large culture, as you heard, of cells, all of which contain this now recombinant piece of DNA. And this was the way we cloned the gene. This was how we identified a gene. When I was doing this in my graduate work, it was to identify genes for antibody molecules.

And what was an anti-body? It was the actual molecular structure. And that is how we did it.

THE COURT: Okay. And I see that you are using the language host cell line. What would you define as the difference between cell and the cell line?

DR. RAVETCH: I think that is a question better posed to counsel. But, the way we use it, when we use cells, we are actually using the cell lines. So, a bacterial cell represents a strain of bacteria that are able to be profligated so they have the property of continuous growth.

THE COURT: So are you saying, you are using it interchangeably?

DR. RAVETCH: In mammalian cells, for example, you

can isolate a cell from the body, a skin cell from the body, for example, and you put it in culture, it won't survive for more than 10 or 20 generations. Then it undergoes a process called senescence. So we develop cell lines that are immortal that will last forever in the laboratory and can be grown continuously.

So cell lines are what we practically use for these kinds of technologies. If you want to express a recombinant protein in a mammalian cell, you are using a mammalian cell line like a Chinese hamster or ovary cell line or a fibroblast cell line.

THE COURT: Okay.

DR. RAVETCH: Next, please. So, the question now is you can clone the DNA, but how do you express the DNA. And this is where the species difference becomes actually important. Because the machinery for expressing proteins in mammalian cells, in human cells, are different than the machinery for expressing proteins in bacterial cells.

And the signals that tell the ribosome, for example, to start the process of translation, the signals that tell the RNA preliminarily to start making the transcript, the signals that tell the process to stop, all of those signals are, in fact, specie specific.

So, in order to basically fool the bacteria to use this genetic code from a beta interferon gene in a bacterial

system, you have to put in the correct signals that the bacteria will recognize. And we call those expression control sequences. I think the patent talks about them. And I use a little blue box, next slide, to represent one such class of expression control sequences. The signals that basically instruct the bacterial cell to express that gene.

THE COURT: Sir, are you saying that there are some differences based upon what the host will be?

DR. RAVETCH: There are, there can be for expression control sequences for the expression process. It doesn't effect the polypeptide. That's the end result. That's specified only by the DNA sequence that was identified from the cloning. It's the practical nuts and bolts of how you turn this into a factory for the production.

And one of the other things that we have to do is to regulate the process. You heard that you just take this, put it into culture, let the, if you did it right, the culture will make proteins. Actually you never want to do that. You want to control the process. Grow the bacteria. And then give it a signal to say now start making the protein of interest. Right.

And that usually means you add something to the media that tells this sequence, the star sequence, to turn on. Turn the switch on. And that's an inducer of the gene expression. The next slide, I believe, shows what happens

here. So you are once again transforming.

Now, a vector that has been engineered to express the gene of interest in a bacterial cell or a heterologous cell you create this transformed cell population. Next slide. And this cell in transformation with this new modified recombinant DNA. And now you put this into a culture. Once again you grow up lots and lots of bacteria, hundreds of millions of bacteria.

They are not making the protein. Now you add -- the next slide -- something to the media, the inducer, the blue element, if you will. And by doing that you have induced the expression of this particular gene, this heterologous gene. And now the culture will fill up with the recombinant polypeptide. Once again specified by the DNA sequence of the gene that you are interested in, but now under the control of the sequences that you need to regulate the process.

And then from this you can purify the protein. And then once you have purified this polypeptide, excuse me, you purify the polypeptide, you often have to go through a series of steps to get it to fold correctly. So it now has the right shape to be biologically functional.

Often what you get out of the bacteria isn't biologically functional because it's in a very different, what we call natured or unfolded state. Same polypeptide, but it hasn't gone through the process of folding correctly. So you have to do biochemical manipulations to get it to fold. And

then you have a biologically active protein molecule.

Okay. So, once again, other things that can happen to a polypeptide which won't change the polypeptide, but will, in fact, potentially influence the protein are the addition of other types of molecules onto the polypeptide. Sugars are added. That's called glycosylation. You can add lipids. That's called lipidation. You could add other types of molecules, cell groups and so on and so forth. And all of these processes can occur naturally or not. And they can influence function or not, depending upon the individual polypeptide.

Okay. That's all I had.

THE COURT: That's good. Thank you very much.

DR. RAVETCH: Thank you.

THE COURT: Anyone else? Do you want to respond?

MR. GROOMBRIDGE: No, your Honor. I think we are ready to go to the argument phase of this. The only question I would have is given that we have run perhaps a little longer than --

THE COURT: Do you want to take a break now? Is that it?

MR. GROOMBRIDGE: I am wondering whether given the large assembly of people here, someone might appreciate a break.

THE COURT: Why don't we take a break. How much

time would you like to have? I'm flexible.

MR. GROOMBRIDGE: Ten minutes.

THE COURT: Would you like to break for a half hour?

MR. GROOMBRIDGE: What would preferable?

THE COURT: Half hour. Whatever it takes you to go get something to eat and come back.

(Lunch recess)

THE COURT: We are going to begin now with the argument portion. Back to our argument.

MR. GROOMBRIDGE: One other thing, and this may very likely be better taken up with the magistrate judge, but the parties have agreed to a three-month extension of fact discovery. And we would expect to be submitting something to the Court on that very soon.

THE COURT: Okay. Very well. You can certainly address that with the magistrate judge, but I will pass that along as well. So that's a three-month extension on fact discovery.

MR. GROOMBRIDGE: Yes. That will take us through to the end of June.

THE COURT: All right.

MR. GROOMBRIDGE: So, now returning to the matter at hand --

THE COURT: All right. Before we begin, I just

have a very basic question in terms of plaintiff's position.

In terms of the claim itself, how would you refer to it? Because I have seen the terms used somewhat interchangeably in the papers or maybe in odds on the papers.

Would you describe it as a method with follow-up descriptive terms? Would you describe it as a product by process? Would you describe it as something else?

MR. GROOMBRIDGE: It's certainly not a product by process claim. It is a method of treatment claim. And we might look at it, and this, in fact we have some slides on this. But this is a hierarchy. At the top we have a method of treatment, and the method involves giving a patient something. And then dropping down in the hierarchy, the something is defined by how it's made.

So, if one were to break out the something separately, one could say that that is a product by process description. But, a product by process patent claim is still to a product. This is not to a product. It is to a method that involves using a product.

And maybe the best way I can -- the best metaphor I could use here is to say imagine we had a patent claim to a method of sweetening pancakes using maple syrup made in Vermont. The plaintiff's view is you can practice the method if you go down to the supermarket, buy a jug of maple syrup that comes from Vermont, take it home and put it on your

pancakes. The defendant's view is no, you have to go to Vermont, tap the trees, boil down the syrup.

So in that question it would be the maple syrup made in Vermont could be analogized to a product by process description. But the method of sweetening pancakes is still a method of using something. It's not a claim to a thing. All right. It's not to the jug of syrup.

And so ultimately this, the dispute isn't over what the -- and this is why the dispute isn't over what these terms "produced" and "transformed" mean. It's over who has to do them and when. And so we begin and end by saying this is a method of treating patients by giving them a drug.

THE COURT: And what guideposts do you believe the Court has for ascribing some sort of meaning to the scope of those claims? How would the Court decide whether it is, in fact, a method with descriptive terms or perhaps something else, an affirmative process?

MR. GROOMBRIDGE: Well, I think one, the Court would follow the hierarchy of source material that the federal Circuit lays out, you know, most definitively in the Phillips decision. And this is exactly what I will go through.

The Court would look, first of all, to the architecture of the claim itself and say what, how was this put together and what do the words say. This is a legal instrument and it was written carefully to convey a particular meaning.

Then the Court would look at the description in the patent and say, you know, how does this inform. And finally the Court would look at the patent prosecution and say what light, if any, does this cast on it.

THE COURT: And I certainly understand and I understand the rigors of that analysis.

Would you say that there is any close case to your situation?

MR. GROOMBRIDGE: No. I believe there is no close case to this situation. And I believe, your Honor, this is a highly unusual, perhaps unprecedented argument made by the defendants because, I don't know of a nice way to say this or a nicer way to say this, they couldn't come up with anything better.

And it is a very unusual argument that would lead to, frankly, absurd results. And that's the nub of the issue we have got here, that what the defendants are trying to do is construe this claim out of existence. All right.

Now, your Honor asked well does the transformation happen once or more than once. It only happens, I mean in any meaningful process, this is a very difficult, complex operation that is the -- you know, toward the front end of a huge regulatory process. It takes 20 years to get these products to market. All right.

And the idea that this patent claim was written to

require a physician to do something that only a team of molecular biologists with tens of hundreds of millions of dollars and adequate, vast access to resources can do, that the only person who can practice this is a physician who inserts that DNA and grow cultures themselves and grows them up and purifies them and then only then treats the patient, is frankly absurd. What that means is the claim will never be practiced by anyone.

And the reason, you know, and there is no shortage of legal talent. There is very competent, I mean these are some of the best patent lawyers in the country. Right. That the reason this is going on, your Honor, is because basically what this case is about is not whether the patent is infringed, but who invented it first, those scientists around the world who were racing to get there. The real guts of this case is who thought of this first.

And the defendants don't want to go into a fight having to say yeah, gee, we admit we infringed. So, they have passed through this over and over again and they have come up with a frankly very creative argument. I take my hat off to them. But, we labored in vain to find any case where anyone had made an argument like this because it's a very out there argument. Right.

And that is why, in fact, it was even difficult as we progressed through the briefing, the meet and confer process

and then the briefing, the reason why it involved the briefing is because at the beginning it didn't even seen as though it was a claim construction argument. It was couched by the defendants in terms of the evidence that the plaintiff would have to adduce at trial in order to prove infringement. That, you know, that's not claim construction, that's about a burden of proof or something. Right.

And I guess it evolved and we have certainly come to the point where we say look, issue is fully joined. Let's just get this resolved. Let's not put it off. But, ultimately it's a highly unusual claim construction argument.

In over 20 years of practicing patent law, I have never come across something like this. I have never seen another case like it. And ultimately so in terms of looking for guidance in prior precedent, I suspect that that's just not going to be a valuable exercise, and we have certainly looked.

One can break it down. So product by process claim, I would be happy to talk about, okay, what's the law on product by process.

THE COURT: They are relying on a number of cases but they rely on the Abbott case.

MR. GROOMBRIDGE: But, I don't think there is any dispute. Usually what happens in a product by process case is this, the reason for product by process claims is I have invented something but I can't tell you what it is. I can only

tell you how I made it.

And very, you know, to give an example, an antibiotic which I produced by fermentation of some particular microorganism that I found out out in the countryside. And it turns out that it makes just a great antibiotic. I can't, I don't know what the structure of that is. I am still entitled to a patent. And the way I get a patent is I write a claim that says the product that is produced by flattening this microorganism and fermenting it and purifying it, and that's great. And the reason is I couldn't describe it by what it is, I could only describe it by how I made it.

The law says, okay, you are free to do that. If you do it, the only thing that infringes it is the same product made by the same process. If somebody can figure a way to make the same product by a different process, they are outside the scope of your patent. And that spawns disputes like some of the ones that they have cited where we get into court and an accused infringer has figured out, you know, for example, generic drug companies has figured out a clever way to make it that's different.

And the patent owner shows up and says that makes me mad, I think you infringed. And the defendant in that case says no, you are trying to read out these process limitations and we'll work it out with the Court systems. And the Courts invariably say the product by process claim, the product has to

be made by the same process.

Now that's all fine. That's irrelevant here because we don't dispute any of that. And part of what's going on in their briefs over and over again is an attempt to set up straw men arguments and try to recast what Biogen is saying. They are saying Biogen is trying to read out these limitations, you know, produced by and transformed by affirmative limitations in the claim. That's absolutely not the case.

The reason there is no dispute that there is affirmative limitations in the claim, there is no dispute that that the product that you give the patient has to have been produced has -- has to include a polypeptide produced by a non human host that was transformed with a micro DNA. Everyone agrees.

The other thing that everyone agrees with is they do that. They did the transformation. They do produce that. The reason for the disagreement is just as your Honor went exactly to this point, they did the transformation as I just heard in 1981. And they also, they make these products, some of them outside of the U.S.

So the view of the world is look, I did the manipulation of the DNA before your patent issue. I am doing exactly what your patent says. Right. But, I did some of it before that. And if I could make that an affirmative method stamp, I would have a defense because I have to -- for

infringement, the law says in a method claim, the infringer has to practice every step of the method.

So, if this claim has three steps instead of one step, and if this is a claim to a method of transforming and then -- a step of transforming and then a step of producing and then a step of administering to a patient, I can say as defendant I did the step of transforming before your patent issued. I maybe did the step of producing outside of the United States. I shipped the product in with instructions for physicians to administer it to patients just exactly the way you say. Right. And that all happened.

The patient got it within the terms of the patent and I made hundreds of millions of dollars doing that. But, I don't infringe because I did the DNA manipulation many years ago in another country. And that's what it boils down to. So that's why, your Honor, we don't have the dispute about the meaning of the terms.

Your Honor heard I think the same thing three times over this morning. I think that what we have a dispute about is if you look at the architecture of this claim, is it a method that has a step of doing something and then a description of the composition? Or is it a method with three separate steps? And that's the nub of the dispute. And I may be wearing out my welcome with this but --

THE COURT: No, not at all.

MR. GROOMBRIDGE: But, I will jump into the slides here.

So here is what I would like to go through is the patent, the legal framework very quickly. The disputed issue which has, as the slide suggests, apropos what I was just saying --

THE COURT: You know what, let me just address the terms "produced by" and "transformed by". I know we are basically making the same presentation and we seem to be on board with how those terms are defined.

Is there a specific agreement that you would like the Court to take as far as those terms?

MR. GROOMBRIDGE: Your Honor, I actually -- from the Court's question this morning, I suspected I might be asked that and I armed myself with page 10 of our opening brief.

THE COURT: All right. I have that. I know you have a chart regarding --

MR. GROOMBRIDGE: We have a chart and I don't know that there is need for the Court -- oh, well, everyone is on their way there already. I was going to say no need to find it.

So, our view on produced by a non human host, our first view is this, and basically these words, we are not going to get better by paraphrasing them. If we wanted to paraphrase them, we could say expressed by a cell line that is not a human

cell line.

THE COURT: But, your primary argument is that it's easily understandable at this point. It need not be further defined, correct?

MR. GROOMBRIDGE: That's right. You know, there is a possible subsidiary dispute around host. Is that a cell line or not? I think based on the remarks this morning we don't appear to have a dispute on that. And, you know, we are not looking at any magic to these words, you know.

If the defendants have a difficulty with some choice of word we have made, you know, that's very resolvable. And I think the same is true with "transformed". You know, that might have a slight caveat there where there may be again a temporal issue because their proposal is in the present tense and ours is in the past tense. And that matters precisely because of the dispute about -- but, as far as concept is concerned, you know, we are saying, look, if transformed means you have taken -- the DNA molecule has been introduced into a cell or cell line in a stable, non transient manner, and again conceptually I don't think we have any disagreement, what I would -- my suggestion was going to be, your Honor, that we --

THE COURT: Take a moment to discuss?

MR. GROOMBRIDGE: Yes, exactly. You know, I think the defendants, there are two defendants, they may need to confer.

THE COURT: And you can certainly start that today. You could also continue it afterward and get back to us to the extent there is any possibility for agreement on the entirety or even some of those terms. I would welcome that certainly.

MR. GROOMBRIDGE: So, and just so we are clear, the fourth item here is things like host, does that mean cell or cell line, where I don't -- I think there is no meaningful dispute, but I just want to be clear so we don't have a situation where six months from now we are all saying if only we had raised this with the Judge at the right time.

THE COURT: You know what, I am going to just stop you for one moment because I would like to hear from the defendants with respect to these terms. I know we are in plaintiff's argument at this point.

But, is there any likelihood that we are going to come to agreement with the terms?

MR. BERL: I think with respect to the cell, cell line issue, I think there is likelihood we will come to an agreement. With respect to the definition of "transform", I think if you look at the two definitions that the parties have proffered, it imbues a certain disagreement about the verb tense, which I think you will hear that from both parties.

THE COURT: The tense I understand.

MR. BERL: Subject to that difference, which I

think the Court will resolve in the context of the overarching dispute between the parties, I think we may be able to come to some agreement.

THE COURT: Okay. Because I wanted to get some understanding as to that before we embark on a lengthy discussion on this when maybe we should be focusing more on the scope issue.

But, if you think that there is no possibility or a very small possibility on resolution, then obviously I want this full blown so I can hear the entirety of it.

So, it sounds like there is likelihood that you will be coming to agreement on these terms, whether it's today or, you know, in a couple of days, you can certainly address that amongst yourselves.

How does that sound? I think you can go through the rudiments here. But then I think probably the main focus should probably be on the scope issue. And certainly if it comes to pass where you have gone back to your offices, talked about this and you have not come to an agreement, I could have you back to revisit if I have any issues concerning it.

I mean hopefully I have everything that I need at this point. But, to the extent there is any open issues, I could have you do a telephone conference or do whatever. Okay?

MR. GROOMBRIDGE: Fine with us, your Honor.

THE COURT: Okay.

MR. GROOMBRIDGE: So, moving right along here, the patent, as your Honor heard this morning, the U.S. application was filed back in April of 1981. And the very first thing of substance that happened, this was in April of 1982, was the patent office issued what is called by patent lawyers a restriction requirement.

What the restriction requirement said is you haven't got just one invention, you have got more than one invention. And, in fact, and this is probably the most fundamentally informed thing in this whole long 28 years in patent office, that the patent office looks at this application right at the get go and says, this is, in fact, five different, separate inventions. And it lists them out.

The first one is, I will abbreviate that to DNA. The second one is the polypeptides themselves, the interferons. The third one, and this is important given the arguments that the defendants are making, is the method of making the polypeptides.

The fourth one is a method of detecting DNA sequences. This one kind of whizzes on the vine. In the scheme of things this ceases to be important. The other four are important.

And the last one and most important for this patent is the method of treating viruses and cancers. Because the claims in this patent descend from this part of the

restriction requirement. And the reason I say that, what happens when you get a restriction requirement is that the patent office says these five inventions, five in this case, are distinct and can support separate patents.

What it means by that is, even if somebody else invented one of them, you could still go to patent on the others. They do not stand or fall together.

And the reason that this informs pretty much everything that's going on in this case is what the defendants would really like to do is to say to the Court well, you know, as soon as you have got the DNA, everything else just falls into place and is just completely straightforward. And this is why, your Honor, you heard from Mr. Barsky this morning about that interference proceeding and the Japanese gentleman Taniguchi was awarded priority as to the DNA.

What the defendants would like to do is to say all the DNA, also I suspect why we heard from Dr. Ravetch, that there is a one to one correspondence between the amino acids and the polypeptides and the DNA sequence.

The problem with this, and the problem for the defendants is that unlike most of what happens in the patent office, a restrictionary requirement cannot be reviewed in court by statute. That there is a statute that says -- well, what the defendants would like to do is to say once you have got the DNA, Taniguchi had the DNA, all the rest is obvious.

What they are really arguing in this is to say, your Honor, well it says it's a method of treating, but, you know, what syringe you pick, that's not the invention. So, what it really is is a method of making polypeptides, your Honor, and you should construe the claims accordingly.

The problem with that is it's inconsistent with this restriction requirement. The reason they are doing it under the guise of claim construction is because they know perfectly well that the Statute 35 U.S.C. Section 121 says in essence it makes this like the rule of the case, unlike a lot of things where you could go to the Court and say I disagree with what the patent office did.

This is a rare situation where the statute says either later on the patent or in court you cannot challenge, second guess this. You can't say well, I disagree and I think they don't. They all stand or fall together. They are not separate inventions. So their room for maneuver is severely restricted here.

And that leads us back then to an attempt through claim construction to say well, the real invention here isn't the method of treating, it's the method of making the polypeptide. And you know that is just squarely contrary to this finding by the patent office which is now a done deal for reasons of repose, basically. And ultimately pretty much everything comes back to that.

What happens when you get one of these requirements is it, in essence, splits the lineage of the patent application into different branches claiming back to the same original filing. And one of the things that's important, your Honor, is the procedures in the patent office allow you to split out the patent claims, but they all retain the same specification.

So, because the rules of the patent office say very, very rare that you are allowed to edit the specification after it's filed. It's essentially frozen in time on the filing date. So, where this has happened what you would have is the patent specification that includes description of five inventions, and separate parallel applications in which the claims then are limited to each one of those inventions. And that's what happened here, in essence.

So, the argument, for example, well, there is a whole lot of stuff in the patent specifications about how you make a polypeptide, therefore the claims must relate to that. Again, it's inconsistent with this. And ultimately what's going on here is the patent office said the first category is the DNA. And then there was this interference and Taniguchi won. And we, Biogen, actually pay royalties to under the Taniguchi patent on DNA.

Category 2, the polypeptides, the Court may be surprised to hear that that is still pending in the patent

office even after all of these years. There could yet be another patent on that.

And Category 5, the method of treatment, was granted as the '755 patent eventually and the patent office having full knowledge that the DNA claims have been awarded to someone else. And it's one of the most experienced patent examiners in the entire patent office, and it's the same examiner who has overseen all of these things.

And the reason for that traces back to this decision in 1982 that these are separately patentable. And I will get into a little bit why that would be. Because although the defendants would have you believe the method of treatment is nothing more than picking the right syringe, in fact there is a lot more to it.

THE COURT: You are saying on Category 1 with respect to the DNA, you are saying that Taniguchi was the successor on that?

MR. GROOMBRIDGE: Yes. Taniguchi won on that. And there is currently, on Category 2, there is currently a dispute in the patent office between Taniguchi and the gentleman from California. Biogen is not a party to that. But we sort of view that like a kind of NCAA bracket. When that gets resolved, they may say okay, bring it on Biogen. And the patent office grinds awfully close. So this is perhaps years worth of further proceedings there.

So, but you know the DNA went to someone else. That doesn't mean, okay, so everything else is just, you know, some sort of trivial implementation once you have got the DNA in place.

THE COURT: Are you saying that that DNA and that analysis is the same as what is described in this claim?

MR. GROOMBRIDGE: Right. Well, the DNA that Taniguchi, I believe, and I am operating from memory, would have been the same DNA that is described in the DNA part of that Figure 4 that I put up with all the long series.

It's not the same exactly as the DNA in claim one of this patent. This is a more complicated relationship between them, which goes to how Walter Fiers, our inventor, had actually gone about creating this method of treatment.

THE COURT: Well, if it's not exactly the same, is it relevant to us?

MR. GROOMBRIDGE: It is relevant in the sense that, to the extent that we are talking about -- we tried to get and failed, a patent to the DNA for human, for beta interferon. That was the subject of the interference. And the courts eventually found that Taniguchi was entitled to that.

There is an issue in terms of who was first with the fact that people outside the U.S. -- only activities in the U.S. count. So, that's, you know, that's a legal principle. But, in terms of the absolute who got there first, there could

be a different answer. And there certainly were groups of scientists racing for the same thing.

THE COURT: Okay. But, the fact that that sequence may be different from the sequence that we are addressing here in claim number 1 of the '755, to the extent it's different, wouldn't that impact us? Because we are not really discussing the same DNA sequence.

MR. GROOMBRIDGE: I guess what I would say is what we have got here, we have defined four pieces of DNA as alternatives that you could use.

THE COURT: In this one.

MR. GROOMBRIDGE: In this one, in claim one. Each one of those pieces is a subset of what Taniguchi had. And if you overlaid them, there is some redundancy between them. If you overlaid them what you would end up with is the same single piece of DNA.

So, for practical purposes, I don't believe there is a difference. I think I would say that Biogen had its chance to try and get a patent on the DNA and it lost. That's done and finished in 1993 in the federal Circuit and too bad for us.

But the point for the future, for now, this case when we are looking in the future, is that because the patent office found the polypeptide, the method of making the polypeptide, and the method of treating human beings with the

polypeptide are all separate inventions that stand independently, then it doesn't matter that the DNA is in the prior art. Someone else invented it.

And my client advises me, before I give away the store, that there is actually still a pending dispute on part of the DNA. And so let me please, your Honor, retract those remarks to the extent anyone would say well, Groombridge said Biogen lost on this.

THE COURT: All right. Point well taken.

MR. GROOMBRIDGE: It's more complicated than I appreciated, and I apologize.

THE COURT: Thank you.

MR. GROOMBRIDGE: Now, moving along, and I don't want to soak up all the time, but the real purpose of this is just to say that the patent is talking to, not to the lawyers in the room, it's talking to Dr. Ravetch and Dr. Jackson. And, you know, so if transformed makes sense to them, then that's enough.

And then the hierarchy of the source material, we start off with claim language. And then, you know, the federal Circuit says always start with the claim language. Most cases, that is kind of, it's nice to know, but it really doesn't help because we are arguing over what widget means. And all the claim says widget. This is a different case, the case where the claim language actually is very helpful because of the

words chosen, the tense of those words and their arrangement in a logical flow within the claim, as we will see. So here we would say that, in fact, probably the most helpful source is the claim itself.

The specification, again we look at that. We always look at it and we try to get something in alliance, our view of the claims with what the specification says.

THE COURT: Back to the case law just for one moment. In terms of how the claim is actually written, you don't believe that there is any case on point with a claim that would be written in a similar matter that has been construed by the courts?

MR. GROOMBRIDGE: To our knowledge, that's correct, your Honor. And I think the reason is because I don't think an argument like this has been litigated.

Now, the prosecution history, the last part of the last leg on the stool, the three legged stool here, we certainly should look at that if it's in evidence. The Court may be grateful for the fact that we have not included all 28 years worth in the record.

But, the important thing is this, the relationship between the claims and the prosecution history is sort of like the relationship between a statute and the legislative history. And so the federal Circuit is expressly cautioning us here that because it's not final, it often lacks clarity and it's less

useful for claim construction purposes.

And we would say given the arguments that have been made, which in my reading of the briefs I have to say a length of clarity this morning was something that came out that we think that this principle is implicated in the dispute here.

Finally, extrinsic evidence, the Court is completely free to look at extrinsic evidence. It just can't, I can't change the meaning of the claim by summoning some silver tongued expert to say well, Judge, let me tell you what they really mean.

Now, here is the heart of the dispute. To us this is a method of treatment consisting of a single step, just the one step, administering a recombinant polypeptide.

When we look at the claim, again the very beginning we talk about the claim, it's a method for doing certain things, treating diseases, comprising this step of administering to a patient something. And the only step that is ever called out, the only time the word "step" appears is right there. And that is the first or most important thing that I mean in terms of the claim language itself, we think, answers the question.

If this were a multi-step method, the word "step" would be in it more than once. If we pass this claim down, let's just gray out the claim and then put back in the really operative language here, it's a method for treating disease

comprising the step of administering to a patient -- that's the only step -- a therapeutically effective amount of a composition comprising.

Now, your Honor, as we read this claim that everything that follows that is, in essence, a adjectival description of the composition. You can call it a product by process description. You can say the composition is the product and this includes the process. We don't argue with that.

What we are saying is that everything in this claim after that is a description of what has to be administered. It's not a process step that has to be carried out. That's why the word "step" doesn't appear here. It's why administering is in the present tense. And if we went back and looked, we would see transformed, produced and transformed in the past tense. It's why we think about sequence of events here.

If, in fact, this were the method that the defendants say it is, we wouldn't start by administering to the patient. We would start by transforming the DNA. Then we produce the recombinant polypeptide. And then we would administer it to the patient. So, it's all in the wrong order if you read it the way they read it.

And so what this means, this is the Vermont maple syrup. And it's saying, yeah, it has, someone had to be in

Vermont. Someone had to tap the trees. Someone had to made it. That's fine. But, for practicing this method, all we have to do is go to the supermarket and buy some. You don't have to go to Vermont and tap trees.

Just as Vermont maple syrup is an adjectival description of the syrup, all of this is an adjectival description of the therapeutic drug that has to be administered.

THE COURT: When we started today we had discussed whether it would be a product by process. And I believe I asked you that and you said no, it's really a method for administration.

Do you feel, after thinking about this, that those terms are interchangeable?

MR. GROOMBRIDGE: No, not in the least. What I feel, and I feel I am not doing a good job of explaining it, but what I feel is this piece is, this is the method. The method ends up, the last part of the method, in fact the only part of the method is administering the composition.

Now, if we just started the claim right here with the composition, we scratched out the method. Ignore that. And say now I am going to consider this claim as a claim not to a method, but to a thing, a composition. You could then say the composition is defined in product by process terms.

THE COURT: So, only if it were a thing as

opposed to a method.

MR. GROOMBRIDGE: Right. That's it.

THE COURT: Because that's the distinction.

MR. GROOMBRIDGE: Exactly. It may be a method of using a product by process and then nested like Russian dolls inside one another. But the biggest one is the method.

THE COURT: So that's the distinction. And the way I read your argument is that you are saying that this claim is a method of, a step of administering to the patients the following.

MR. GROOMBRIDGE: Exactly.

THE COURT: Which is described.

MR. GROOMBRIDGE: Exactly. As long as it meets that description and you made it by, you know, transforming the cell and then producing -- as long as it meets that, the fact that you did it some years ago or you did it in China, doesn't matter. You are still treating the patient and getting the medical benefit and infringing the patent.

Now, again the purpose of this slide was really just to say there is no dispute that the claims require the step of administering the composition. We all agree on that. There is no dispute that the composition has to have a recombinant polypeptide. No one is saying you can get the natural stuff and administrate it to a patient and you would be covered by this. There is no dispute that the recombinant

polypeptide must have been produced using the transformed human host. There is common ground for all of us.

The dispute is only over who has to do it and when. And this is where the defendants have come up with this argument of saying let's rewrite it into a three-step method and say if you are not doing all three steps in the U.S. within the terms of the patent, you are not infringing. And that's, I think we have covered that conceptually. But this is where it's laid out in their brief.

Now, the problem with this is that it produces an absurd result that if you look at this claim and you construe it the way that they want to construe it -- again my learned colleague thinks I have skipped over something important here.

So, here they say that these terms was in adjectival terms. It should be in the present tense and should have the word "step" with them and you have to do that. And there is an express statement they say it has to be carried out during the term.

So, the argument is going to be not that we are doing something different technically, medically, from what you describe in your patent. But, that we structured our affairs in such a way that we have a kind of get out of jail free card that we can do this and still not be covered by your patent.

And the absurd results is the way they want to

construe this is to say well, the same person or entity has to manipulate the DNA, produce the protein, purify the protein and then administer to a patient and presumably you get FDA approval somewhere in there.

And, you know, there is probably certainly no individual in the world who could ever do that. It's not clear to what extent there are even institutions that could do that. That basically what they are saying is let's construe this in a way that we construe it down to zero. And normally when an advocate comes to court and says well, my adversary's position would yield an absurd result, typically what happens there is the adversary stands up and says absolutely it would not. The result is perfectly acceptable. But that's not what's happened here.

Here when we said well, your Honor, this is yielding an absurd result, the answer, it took us to page 27 to get there but feeling they had to address it, the answer is yeah, so what. That if it's an absurd result, well, that's just the result that it has to be.

But my point is we don't appear to disagree that that would be the result, as a practical matter. Essentially no one would ever practice this patent.

THE COURT: I believe their argument is it shouldn't matter to the Court whether it's an absurd result because you should really be looking to construe the claim and

their scope.

MR. GROOMBRIDGE: I don't disagree with that, but I think that when we start out and say it is presumptively plausible that a sophisticated company would spend 28 years getting a patent that doesn't cover anything, and that if you are going to make that argument, you had better have some pretty powerful evidence to back it up.

And I would submit, your Honor, that's precisely what is lacking here. Because coupled together based on a couple of statements in 1996 and 1997 back and forth between the patent office, do not expressly say this.

And if we go through this, I will move along quickly because I think I have already said quite a bit of this. But, from looking at our triad of sources, the claim on its face only uses the term "step" once. And it is carefully architected to have that series of indents, if you will, to say the step is just administering the composition.

The specification talks about how this method of treatment is a fundamental aspect of the invention. You know, and I will come back to this, but in our view one of the differences -- and if you know should we ever reach the trial in this case, this is something that will be front and center -- is that the other scientists who were doing this were focused very much on pure science and they wanted to get that DNA sequence.

Fiers in Belgium was focused much more on how do I solve the medical problem. And the body of work that he did when he described it in this patent differs from the work in the rival patents, and it differs with respect to how do I actually use this stuff in patients and make it medically useful. And that is why he ended up with the method of treatment, the medical use patent, even though somebody else got the DNA patent.

And the third leg of the stool we have here, the one thing that is unequivocal in the patent prosecution is that statement at the very beginning, that a method of treatment is patentably separate and distinct from the method of producing the polypeptide.

THE COURT: We touched upon this before, but what do you make of defendant's argument regarding the step of administering to the extent this is open ended?

MR. GROOMBRIDGE: I am not sure that I understand.

THE COURT: As opposed to describing what the means of administration are, it just provides the step of administering.

MR. GROOMBRIDGE: Because the point of the method of treatment, the invention doesn't reside in what syringe you use or what kind of things have to be injected or what kind of pill you put it in. But it's an attempt to trivialize the invention by saying well, they purported to get a patent on

some delivery mechanism. No one is saying that.

THE COURT: You are saying the method is the fact of treatment.

MR. GROOMBRIDGE: The method is the ability to make something, and here's the important part, and know that that something will actually work to treat human disease. And the patent goes into fulsome detail about how you do that second part. Because I agree absolutely with what Dr. Ravetch said this morning. You can take that DNA and you can make a polypeptide and you could get a complete dud. The polypeptide can be worthless. It can be ineffectual, have no biological activity.

And the key part of this patent, and the part that supports the method of treatment is a very rigorous body of work on proving up how you know when you have done this, that this thing will actually work in human beings and be used in treating disease. It is that work that supports -- and, moreover, how you get enough of it.

Because remember the claim was also a therapeutically effective amount. Because part of the problem, if all I have got is something that costs $22 billion a pound, that can't be treating anyone. And what this inventor did was to say I am not just interested -- on an academic level it's great to get that sequence and put it in a more prestigious scientific journal fantastic. But, my interest is I want to

treat human beings.

I mean this isn't on the record but what he did was assemble a multi-disciplinary team. But, he did a more difficult and extensive body of work. What is in the record is his description of what he did in the patent. And that's why we come out in a different place here.

So, to come back to the Court's question, it's not, the method of administration, the invention here is not picking the right syringe or the right diluent, you know, if you want to put it in a pill to a degree or a pill --

THE COURT: Just the fact that you have a substance that is suitable to treat.

MR. GROOMBRIDGE: Precisely, that has biological activity.

THE COURT: I understand.

MR. GROOMBRIDGE: And so what the defendants are trying to do is rewrite the claim. In their brief they say well, the process included the step of transforming. And, you know, I would just like to point out that's precisely what isn't in the claim. It says transformed. It exactly doesn't say the step of transforming or producing.

And again note how they have reversed the order here because if it did mean what they would like for it to mean, it would be in a different order. It would have to be reversed. You can't give somebody something that you haven't

made yet.

So, the fact that you have to in your brief rewrite the language of the claim is a pretty good indication that the claim doesn't mean what you say it means.

And I think this is just a synopsis of the points that I have made. So, I will, you know, there's others slides but unless the Court has a question, I don't think I will go back through it.

The architecture of this claim is carefully worded as a legal instrument to say there is just one step and the composition is described historically not in the present tense through a series of steps.

Now, if we turn to specification, the specification calls out that the purpose of this is to produce things that we could actually use in a medical context. That we want to be able to have things that will actually have biological activity. And it calls out the problem with the state of the art that is what we call the intriguing and fascinating substance, but it's in very minute quantities.

Then it says with this we can get polypeptide that does have the right activity for use in treatments and it allows, moreover, the production in amounts by method not available. In other words, we are actually going to be able to treat human beings in a medical context.

Now, I said the specification went into some

detail on this and here the slide 34, this is the portion of the specification that talks about how medical activity was proved. So we are looking at columns 37 through 46 of the specification.

And just to call out the headings there, all of this part of it, it's not about how you make the polypeptide which is described certainly in great detail, but how you know that it has biological activity. Because just as Dr. Ravetch said, you could go through this whole exercise and very easily end up with something that has no activity and is useless in medical treatment.

And after this is another part of the patent specification that talks about again how we approve the yield and activity. So, because precisely what we want to do here is to have the activity, the right kind, and also get enough. You know, if I have three molecules of this, even if they have the right activity, that's interesting, but I don't have a therapeutically effective amount.

And ultimately to come back to that is why, your Honor, the patent office said these are different inventions. And it is why the method of producing polypeptides is item number three in the five different inventions. And the method of treating viruses and cancers, the ancestor of these claims.

THE COURT: And I'm sorry, the application with the five different claims was called the?

MR. GROOMBRIDGE: It's called the 609 application.

THE COURT: Okay.

MR. GROOMBRIDGE: And it is the very first one that was filed in the United States.

THE COURT: Okay.

MR. GROOMBRIDGE: Now, also in the prosecution history I would point out that I have said several times that the claim only uses the term "the step of" once. It didn't always even have that language. It used to say just administering.

So, in the prosecution history this language "the step of" was added. It wasn't always there and carried along. And again this may not be the, you know, the rock crush of a point, but our view, your Honor, is that if they had meant to put it in three times, they would have put it in three times. That when they put it in, they put it in once and they did that deliberately.

Defendant's arguments, I think I probably don't need to dwell on this too much, I think we have covered much of this. But I will go talk about the first point because the core of their argument is essentially to say well, look, in the back and forth with the patent office, you said process steps plural and therefore there has got to be more than one.

So let's drill down on that and see what actually

happened. And this finds the origin in the statement not by Biogen, but by the patent examiner. And remember now there are multiple parallel applications. The patent examiner looks at some of these applications then pending and says well, the positive process steps in this group of claims, claims 31 through 34, of the instant application, that's the 930, and the positive process steps in claims 31 to 34 of another application, the 723 application, are identical.

What the examiner is saying is you can't get two patents on the same thing. And in our view, your Honor, the reason why the examiner is using this locution, positive process steps, is because he is talking about eight claims, four in one application and four in the other application. And even though those claims have one single step each, there is eight of them. So it natural to write positive process steps when you refer to them collectively.

Now, the defendants take a different view and they say well, the examiner must have meant that there were multiple process steps. And I would submit, your Honor, that as soon as we are in a place where it is not the examiner said, it's the examiner must have meant, we are at the land of inference. When we are in the land of inference, that's not the clarity and lack of ambiguity that is required for the exercise that they want to indulge in.

When we look at this, the problem with it doesn't

end there. It is not simply a problem that they are drawing an inference. The problem is that the inference they are drawing is wrong when we look at what the examiner was talking about. We see why it's wrong.

This claim they focus on. This is the ancestor of claim one of the '755 patent that the time before it had "the step of" added to it and a few other things were added to it. And they say well, the examiner must have meant that the positive process steps in plural were administering, produced and transformed. That that must have been what he was talking about.

Remember he was comparing two things. When we look at the comparison, and let's just go to the comparison here, the other claim that he was looking at has that step, the administering. What's strikingly absent from it is the language "produced or transformed". It's just not in this other claim.

So, if you are trying to draw the inference that he must have been talking about produced and transformed, you are wrong because those words aren't even one of them. And ultimately we come back and look at this it says again there is a gross disparity between what the defendants say in their brief the examiner said, which is here on slide 45, and what the examiner actually said, which is on slide 46.

This is their editorial, their description of the

examiner asserted that the steps of transforming a non human host with a recombinant DNA molecule and producing a recombinant polypeptide in a non human host were actually positive process steps. This is what the examiner actually said. It doesn't say that at all. Those words just aren't there.

And that's why when we look at their brief, the only quote is the word "actual" standing by itself and the words "positive process steps" standing by itself, because that was the only bit they could excise that would actually support what they were trying to say.

Now, what they also rely on is one single instance in the 28 years of patent prosecution where Biogen said, with reference to a single claim, yes, there are positive process steps in the plural. And, your Honor, we concede that is a mistake. Our patent prosecution attorney made a mistake in the writing of that response. He should -- I mean, he shouldn't have said that. But a mistake, one mistake in 28 years' worth of patents prosecution is not a basis to construe the claims down to nothing.

Here is what he said. This is the statement. Claim 31 co-pending application also only a single claim, also recites those positive process steps. Now right before that, the lawyer repeats what the examiner said. But the examiner was comparing multiple claims and it used the plural for that

reason.

Our belief, your Honor, is that, and I mean I view the fellow as not having been deposed yet, but what happened here is he just carried along the plural that he had used here and in error. He shouldn't have said that, but he did.

Now, in the exact same document, this submission in 1997, what he also did, this was the place where he added the words "the step of". And in this instance he did it in the singular and he certainly didn't do it with respect to transformed or produced.

So, what we see here, your Honor, is look, we have got a document that has part of which deals with the operative legal language, the statute, if you will. And part of which is the legislative history, the editorial going along with it. He meant -- there's a disjunction between them. He made a mistake in the non operative part of it. He didn't make a mistake in the operative part of it. And we suggest, your Honor, pretty much any lawyer knows when you are comparing the operative part of the legal document and the non operative part, which one would control. So, this is --

THE COURT: So, are you saying that he used "steps" after the, after claim 32 was canceled?

MR. GROOMBRIDGE: Yes. He used steps in reference here to claim 31. I have to confess I don't actually know whether he had canceled, at this point, claim 32 because it's

in another application. But, I have a map of those two side by side. But, I think, I am not sure it depends on claim 32, but I think I would say that it's clear that in this statement he is talking about a single claim be he uses the plural. And he shouldn't have said that. It doesn't have multiple steps.

But, when he was writing the claim itself, that very claim, claim 31, he didn't use the plural and he didn't put in the word "step" when he was talking about transforming. He was doing this in the same document. It's not like it was a different application or some years later. This is the exact same document.

So our view of that answers the question. It would tell you it's a mistake. And, you know, ultimately this is where we come back to the law is the law, quite plain, that if you are going to have this situation where you say well, you have made a disavowal of claim scope, which is the argument that is made here by the defendants, you have -- in essence what this is saying is I know what the plain language of the patent claim says, but I am going to give it a different meaning because something happened in the patent prosecution that compels differently.

And the federal Circuit has said repeatedly that principle can only be invoked where the statements are clear and unmistakable in the patent prosecution where they are not subject to more than one reasonable interpretation. And if

there is ambiguity, you can't invoke this principle. And our, I guess where we come out, your Honor, is to say look, if the Court finds itself saying it's not clear what happened in this patent prosecution, this particular piece of it, that is in itself the answer to the question.

If it's not clear, then it cannot be a clear and unmistakable disclaimer, and there is no disclaimer. So, trolling through all of these things in multiple applications and trying to figure out who meant what when, it is a perfect example of why this all exists. There is no express statement saying oh, no, our claim has multiple steps. And that should be the end of the story.

THE COURT: And as far as being a mistake by this attorney, I am sorry, was there something submitted by this attorney? You said he wasn't deposed.

MR. GROOMBRIDGE: No, he has not yet been deposed. We certainly expect at that deposition it will happen. That is not something we have put in the record. We rely solely on the difference between the language he used in the claim and that remark in the accompanying description.

THE COURT: And I understand your argument to be there is no disavowal because at best it could be questionable.

MR. GROOMBRIDGE: Precisely, your Honor. Now, just to wrap up, I think we have probably covered this more than sufficiently. But, these ancillary disputes that the

parties will attempt to work out is the tense issues is really the exact same thing as when the transformation is going to take place.

Host, again I gather that it's likely we will be able to reach an agreement. Our view is it can't be a single cell, because a single cell can never produce --

THE COURT: Is there still a dispute with respect to the use of a genome?

MR. GROOMBRIDGE: I think there possibly is, and let me explain what that is. Here this is the same language where we have the present versus the past tense. And here the genome, the issues -- there may be that there is no dispute. But for the Court, to explain the reason for the debate is coming back to our favorite picture of the rather attractive bacterium here, or if we had a cell from a mammal, it would have a nucleus. And in the nucleus would be typically what's referred to as a genome, although it would be chromosomes that would contain the native DNA of the cell itself.

THE COURT: Genome is defined in the patent itself in the bottom of column eight.

MR. GROOMBRIDGE: Yes, it is. The point here is the inserted DNA doesn't necessarily have to be in a chromosome. It can be in one of these plasmids. There's loops just sitting there by itself. And the other issue with it is that it has to be in the host and it has to be stable so that

you can have these multiple generations that is not just going to be in there and disappear over time.

Again, we don't think that there is any technical disagreement. This is an answer that Dr. Ravetch put in the deposition. So on a technical level we seem to be all in agreement. It's a wording concern, stable, non transient, we can work with. The concept I think we are in agreement.

THE COURT: Fine. Understood.

MR. GROOMBRIDGE: My conclusion is really your Honor asked did we find any precedent on this. We couldn't. And part of the reason --

THE COURT: Or negative precedent. Certainly they are citing to a different line of cases and they are extracting different arguments from the same material. I understand that. But, do you see anything that goes either way and addresses a similar situation to your own.

MR. GROOMBRIDGE: We do not see cases on this situation. Part of the reason we respectfully think that this type of claim, this claim written in this hierarchy is not an uncommon thing. Pharmaceutical companies burgeon method of treatment claims all the time.

Here is one from Bayer. Does this look familiar? A method of treatment, comprising, administering, therapeutically effective amount of a thing produced by another thing. It is strikingly similar to this claim and there are

other examples in our briefs.

But the point, your Honor, is everyone in this business knows what these claims mean. They are written this way. This isn't some bizarre foible that Biogen is engaged in. And ultimately what is going on in this case --

THE COURT: You are saying this is a typical structure for a claim and how it's written.

MR. GROOMBRIDGE: Absolutely.

THE COURT: What I gather you are going to say is the only reason we are discussing this in the context of scope is because it's a very unusual defense.

MR. GROOMBRIDGE: That's right, your Honor. And ordinarily what a defendant would do is say when I have a disagreement about what "transform" means and I didn't, you know, when I made this, I didn't transform anything, right, but that's not the argument that's being made.

Sure we transformed it. We just did it in 1981. That there is no technical difference. What is attempted to be made here is to create a legal difference to say well, we would like to interpret this claim with multiple steps so we can argue not only that they all have to be practiced in a particular time frame and in the United States, but also that they all have to be practiced by the same entity.

So that if I make the drug and I give it to a physician who administers it, different people are doing

different steps, and again I get a get out of jail free card, all this is is an attempt to take a claim that is written in a perfectly normal format for this industry and construe it out of existence because it can't find, despite the great array of legal talent who couldn't come up with a better infringement argument, the case is really about who invented this first, not whether it was infringed.

THE COURT: All right. Thank you very much.

Good afternoon.

MR. BERL: Good afternoon. David Berl from Williams & Connolly for defendant Bayer.

The short answer to your question is, your Honor, there is a case. If you will give me ten minutes and indulge me, I will get there and I will explain it. But the answer to your question is yes.

Let me begin by framing the issue here. There is no dispute in this case any longer, there was at the beginning, that the recombinant polypeptide administered in claim one in fact has to have been made by the process set forth in claim one. It has to have been produced by a non human host and transformed by a recombinant DNA molecule . There is no dispute about that. The only question is who has to do it and when it has to be done. And the answer to that question is repeatedly given by fundamentals of patent law.

The Supreme Court laid out in 1997 something

called the All Elements Rule. This is black letter patent law. And what it says is that each element contained in the patent claim is deemed material to defining the scope of the invention.

There are all sorts of different kinds of limitations. There are process limitations. Those process limitations define what a defendant must do in order to infringe a claim. What process it has to undertake. There are product limitations. And those product limitations define the product. We have another copy.

THE COURT: You know what, I have it here.

MR. BERL: You are where I am getting soon.

THE COURT: Yeah, I am.

MR. BERL: There are product limitations that define the characteristics of the product that defendants have to sell.

What plaintiff has tried to do here is, what Biogen has tried to do here is create an all new kind of limitation. There is nowhere present in the entire history of the American patent jurisprudence that is some kind of limitation that has to have been conducted, a process that has to have been conducted, produced and transformed, but somehow does not limit what the defendants have to do or when they have to do it.

And we submit to you that the fact that Mr.

Groombridge stood here and said that he has no case despite searching in vain that stands for this proposition, means something. And what it means is that there is no such thing. They are trying to create something new because what's old, what's existing in controlling case law tells you that every limitation of the claim is material and it must limit what the defendants do.

Let's take a look for a moment at the structure of the claim, because Mr. Groombridge commented on this for quite awhile and your Honor asked various questions. The claim starts with a method of immunomodulation. It is indeed a method of treatment claim.

And with respect to his argument that there was a restriction requirement and the method of treatment is separate from the method of making the recombinant polypeptide, that's right. They are separate concepts. And we are not arguing here, inconsistent with the restriction requirement, that they don't have a method of treatment claim. They do. But, it's not a normal method of treatment claim. It's not like any of the claims that Mr. Groombridge put up in his brief or just put up from Bayer that says a method of treating using X even made by a hybrid donor it says.

And the reason is that the claims continues after where Mr. Groombridge wants you to stop reading. It's a method of immunomodulation for treating various diseases using a

particular composition. So, it's a method using a particular composition, and that composition is a recombinant polypeptide that has to be administered. But the claim doesn't stop there. This is not sweetening pancakes by using maple syrup made from Vermont. It doesn't just stop at polypeptide made recombinantly.

The claim continues. The claim recites specific steps. Mr. Groombridge called them steps this morning. He is comfortable with that, that produced and transformed are steps. Both experts agreed that they are processes for making a recombinant polypeptide. They are set forth in the claim explicitly. This is like a method of sweetening a pancake using maple syrup made in Vermont wherein you chopped down the tree, you get the maple out, you purify the maple, you then extract it, and then you put it into a bottle and pour it on the bottle (sic).

He wants to ignore the fact that the steps are set forth in the claim. That's not an artifice of defendants or their legal team. That's something that Biogen put in its claim. And there is no authority in hundreds of years of case law for the idea that one can simply erase, as Mr. Groombridge wants to do for purposes of assessing the defendant's behavior, language in a claim, language that is the only language that tells you what a recombinant polypeptide is.

It's defined by how it's produced. That language

is meaningful. And as a matter of controlling law, it must limit what the defendants do or what they make. It can't be neither. It can't be neither a process limitation nor a product limitation.

THE COURT: What do you think of his discussion that the use of the word "step" here, there was only one reference to step. It was added in subsequently and it was, in fact, in the first paragraph.

MR. BERL: Sure. Two answers to that. One of which my colleague Mr. Barsky will get into in more detail, which is that they call these produced and transformed steps throughout prosecution and long before the word "step" was ever added to the step of administering.

So, the notion is there is some kind of disparate treatment of administering being a step. And the other one's not being a step is belied by the thirty years of prosecution. But I think the second and more important answer is that the presence or absence of the word "step" is nowhere suggested by any court in America to make any difference to the salient question here which is, is there a process limitation in this claim.

Are there process limitations when it says produced and transformed? Do you find, in any of the case law, judges searching for the word "step" or making a decision about whether something is a process limitation or not, depending on

the presence or absence of the word "step". And the answer to that question is no.

THE COURT: Isn't every word important?

MR. BERL: Every word is indeed important but the absence -- the words that are important here is "produced" and "transformed". And there is an inquiry that courts go through, and we cited the Gemtron decision and the Abbott decision and the Amgen decision the courts go through to determine whether those words like "produced" and "transformed" are process steps that limit the process that a defendant must carry out in order to infringe a claim.

And so with or without the word "step", those cases stand for the proposition that words like "produced" "transformed" are process limitations.

THE COURT: So you view this as positive process steps.

MR. BERL: They are process steps.

THE COURT: Process steps that need to be undertaken.

MR. BERL: That's right.

THE COURT: You do not view them as descriptive material. You view it as a process and one must undergo the process in order to be found responsible to be infringing.

MR. BERL: That's correct. I think one can call it descriptive material in the sense that it describes it by

the process used to prepare it. That's the only description of the recombinant polypeptide that is there. It's a process of producing and transforming. And those are, in fact, process steps that have to be carried out. That's the only description of recombinant polypeptide they provide. And under the law that means that they are process steps that have to be carried out.

Well, we will go to that in a moment. Let's go back to --

THE COURT: In terms of your case law -- and I know we are going to be getting to the case law and obviously I am interested in it -- but, do you have any cases that show or require that the direct infringer has to engage in the process?

MR. BERL: Yes, I do. And Abbott talks about that and Monsanto addresses that question squarely. And if you would like, I would be happy to go through that with you.

Why don't we skip ahead to page 13 of Biogen's brief. Because what Biogen did in its brief, just to get there quickly, is Biogen has admitted, which it did not in its first brief, that the recombinant polypeptide must be one produced by a non human host and not simply a polypeptide with similar characteristics.

Produced and transformed is not some product description. It's not defining what characteristics the polypeptide has. They say it has to have been produced that

way. These are indisputably claimed elements that must be met to prove infringement. And they say if Biogen doesn't contend that it's the direct infringer of uses of polypeptide made by a different process, that they infringed. You have to have carried out that process.

And the only question -- and Biogen admitted the same thing in their ensuing brief -- the only question is who and when, which Mr. Groombridge said earlier today. Biogen also makes clear that to the extent that there is a process step in the claim, the established law is that that step needs to be performed during the step of the patent. The only remaining question then is whether these are process steps or something else.

And why does Biogen say they are not process steps? They say because none of the cases defendants cite support the proposition that it's the defendant who has to make it during the term of the patent. They say the cases we cite are, as they put it, silent on this issue.

And let's take a look at the Abbott case for a moment. Now, Abbott was an en banc decision of the federal Circuit written by Chief Judge Rader that followed approximately two decades of a lack of clarity about process terms in product by process case law.

THE COURT: I believe it was en banc as to certain -- as to certain issues there was a dissent as well.

MR. BERL: That's correct, there was a dissent. But, as to the issues that I will be addressing here which is what is the effect of process language in a product by process limitation, that part of the opinion was en banc. And it was explicitly rendered in order to resolve those ambiguities and lack of clarity from Atlantic Thermoplastics and other cases.

What they held is that process terms in product by process claims serve as limitations in determining infringement. In other words, there was a dispute about whether there was something special about process terms, process terms like these, that were present in product by process limitations. Did the usual rules apply, or was it something different because the process language was simply describing a product rather than, in a usual process claim, where you have steps one, two and three.

And they said they serve as limitations in determining infringement. Why? Because where the inventor chooses to claim the product in terms of the process, that definition governs the bounds of enforcement of the patent right. Where the only description of a product of a recombinant polypeptide is the method used to prepare it, a Court simply cannot ignore as verbiage the only definition supplied by the inventor.

You can't simply ignore that in the infringement analysis and suggest that the defendant doesn't have to do it

or that the usual rules of process case law, that it has to be done during the term of the patent, magically disappear.

THE COURT: Well, does Abbott address whether a direct infringer has to be indicated?

MR. BERL: Let's take a look at that question here, because the dissent raises that question. And Judge Rader, writing for the court, addresses it. And he says that the dissenting opinion lament the loss of a "right" that has never existed in practice or precedent.

The right to assert a product by process claim against a defendant who does not practice the express limitations of the claim, the federal Circuit after two decades of lack of clarity is telling courts around the country here is what the law is. Here is how you address it.

And in language that couldn't be more clear, I would submit, is saying there is no right. You have no right to assert a product by process claim against a defendant. Not against anyone. Not against something you buy at the supermarket like maple syrup. Against a defendant who does not practice the express limitations of the claim.

The notion that Abbott is silent on the question of who must practice the claim, is respectfully not correct. They address the dissent directly and say there is no right to sue a defendant who does not practice the express limitations of the claim. Why? Because those limitations of the claim are

process limitations.

And all of the rules that apply to process limitations must be carried out by the defendant during the term of the patent, applied just the same when it's in what Mr. Groombridge himself called a product by process sort of description.

But, Abbott is not the only issue or not the only case that addresses this question, because Abbott addresses what. Monsanto, we submit, addresses the questions of who and when. Abbott addresses who; Monsanto addresses who and when.

And we submit, your Honor, that this case is on all fours. You asked several times, is there any claim that looks like this. Is there any claim with this sort of structure that answers the question of whether, in a claim like this where you have a process using a product that's made by a process, whether those steps of making the product are limited, whether those have to be carried out by the direct infringer during the term of the patent.

At issue in Monsanto was claim four. Now, claim four in Monsanto was directed to a process of obtaining progeny from a fertile transgenic claim. But, unlike most process claims, it didn't stop there. It didn't say a method of using a transgenic claim. It had additional language. It says that that transgenic claim has to have been made in a certain way, has to have been obtained in a certain way. What is that way?

It referred to the process of claim one.

As you see this is called a dependent claim format. Claim four refers to and is dependent upon claim one. What that means by operation of law, 35 USC 112 paragraph 4, is that that claim in dependent four, that's claim four in Monsanto, shall be construed to incorporate by reference all of the limitations of the claim to which it refers. In other words, claim one is in claim four, just as if those steps were written in the claim, as they are in our claim of the '755 patent.

So, what exactly do you have in Monsanto and what do you have here? You have a process. They are right. This is a process claim. It is not the traditional product by process claim. It is a process claim. But, it's not a usual process claim. The Court can see that. It's not simply a claim that says do steps one, two and three. It uses a particular product.

In Monsanto, it's a process comprising of obtaining progeny, so that's the process, from a fertile transgenic plant. A thing that's used in the process. Here it's a method of treating cancers and other things comprising administering a composition that is a recombinant polypeptide.

In both claims you have a process that uses a particular product, but again the claim doesn't stop there in either case. It makes clear in the Biogen claim that that

recombinant polypeptide is produced by a given process. And in the Monsanto claim is obtained by a given process. And with respect to the tense issue that we keep hearing about, and we will look at more cases later, it's worth noting that this is the same tense obtained by, that is produced by in claim one of the '755 patent.

The idea that everything has to be in the present tense in order to be in a process limitation, the claim, is frankly refuted by not only Monsanto, but numerous other cases I will discuss in a moment.

There is then a recited process for preparing the product used in the process. In the Biogen claim it's produced by non human host, transformed by a recombinant DNA molecule. And in the Monsanto case it is obtained by a process that has three steps.

So again, as Mr. Groombridge put it, this is like a process of using a product made by a process. That's exactly what we have in the Biogen case. He is right to phrase it that way. That's exactly what we have in Monsanto, a process using a product, a fertile transgenic plant, obtained or made by a particular process.

THE COURT: But wouldn't you believe there is a distinction in Monsanto based upon the fact that it refers to a process, specifically refers to a process? Whereas the other is the method of administering.

MR. BERL: Well, this --

THE COURT: I mean its second word is "process".

MR. BERL: You are looking at this process?

THE COURT: Yes, right at the top of your screen.

MR. BERL: Right. Method and process are used synonymously in patent law. This is a method of treatment or process of treating. Under 35 USC 101, it lays out that one can have various kinds of inventions, one of them is a product invention, for example, composition of matter. Another is a process.

THE COURT: You are saying method and process are used interchangeably,

MR. BERL: Yes.

THE COURT: And one should draw no distinction between them.

MR. BERL: There is no distinction between those two words. This is the same thing as a method of administering. And Biogen and Mr. Groombridge agree that this is process for immunomodulation and that requires a step of administering recombinant polypeptide. The dispute is as to whether these likewise are required.

THE COURT: Although if you move down to the next section of highlighted language, obtaining progeny from a fertile transgenic plant under the Monsanto column, that is actually getting something out of the process. The other,

Biogen section, is administering something to the patient, which plaintiffs are alleging is the entirety of what this is about, administering something therapeutic to the patient.

MR. BERL: Right. And here the obtaining progeny, that is what one does in the process. So, that's obtaining something else. The progeny are kind of later downstream children plants, so to speak, in the Monsanto case.

So, in the Biogen process, it's a method of treating by giving someone a recombinant polypeptide. That's what you do in the process, you administer the recombinant polypeptide.

In this case, you also do something in the process using a product. You take that transgenic plant and you do something with it. Obviously you don't administer a plant to a person. They are doing something else. You get children from the plant.

THE COURT: Then we are down to the next obtained by and then we are back to the process and how you produce it.

MR. BERL: Again, so this is not how someone obtains the progeny. This is how you got the thing, the fertile transgenic plant that you are using in the process.

THE COURT: Whereas I think you can draw a distinction, you can say in the Biogen section column, you know, it's claim language, you know, perhaps it is descriptive. Perhaps it could refer back to the actual stuff that's getting

injected.

Whereas if you look at the Monsanto language that's highlighted up on the screen, I don't see how you could say in any way, shape or form that that is descriptive because it's actually providing steps for a process.

MR. BERL: Well, it's not providing steps for the claims process. These are not the steps of obtaining the progeny, which is the claim process. It's reciting the steps of how you obtain the transgenic plant.

So this is, how did you get, how did you obtain or make what you used in the process. And you obtain this transgenic plant by doing bombarding, identifying or regenerating.

Biogen is answering the exact same questions. How do you get this recombinant polypeptide that you used in the process. How did you obtain it? You obtained it by producing a non human host transformed by a recombinant DNA molecule.

In both cases it's describing, if you want to use the word "descriptive", it's describing what you used in the process by the method used to produce it or obtain it. And in that sense it's an exact parallel to both cases.

To be clear, this process is of how one obtains the fertile transgenic plant is not the same process of obtaining progeny. The claim is to obtain progeny from a fertile transgenic plant that itself was obtained by the

following three step process, just as the Biogen claim is to administering a recombinant polypeptide that itself was obtained by the produced and transformed process.

It's interesting, though, it's not only the claims that are parallel in the Monsanto case and in our case. It's the arguments. Respectfully, this sounds exactly like what we heard twenty minutes ago, that Monsanto said claim four is, by itself, a single step process. There is one step, we heard over and over twenty minutes ago. It's just the administering step. They say here it's just the process of obtaining progeny. It's a single step process.

And the rest of the claim they said in Monsanto, that's just reciting a product that's made by an earlier process claim. It doesn't matter whether you bought it at the supermarket or how you got it. It's just a starting material. Claim four is just claiming the process of using the starting material that you got by the steps in claim one.

That's what Mr. Groombridge is trying to say here. He is basically saying, listen, this is a single step, a method of immunomodulation by therapeutically administering recombinant polypeptide that was made that way. The recombinant polypeptide is just a product. It's just a starting material that's used in the claim. And it doesn't matter who made it, when it was made, as long as it was made and you can pick it up at the supermarket, that's good enough

for government work.

And that's the exact argument that they were making in Monsanto. It's just a starting material that was made by that process, not a normal claim. And what they tried to say is listen, this is like a product by process claim. They said, this is just like saying that the product has been made by a given process. That doesn't mean that you have to carry it out during the term of the patent or that the defendant has to do it.

And the federal Circuit dismissed this summarily and squarely. The Court finds this argument irrelevant to the resolution of this issue. Even if claim four is a product by process claim, or more aptly a process of using a product made by a given process, which is how Mr. Groombridge termed our claim a few minutes ago, Syngenta, not anyone, Syngenta, the defendant in the case, would still have to perform the steps of the process of claim one to infringe the claim. The defendant has to carry it out in order to infringe the claim.

Now, Monsanto, the patentee in that case, just as the patentee here, basically said it doesn't matter that some of the language in the claim about how the product used in the process was made, weren't carried out during the terms of the patent. They said that's just a trick. We heard that twenty minutes ago too, that they arranged their affairs so they wouldn't have to practice all those claim steps during the

terms of the patent. They did it earlier so they can get out of jail.

And the federal Circuit looked at that argument and said, what do we think about the argument that you can infringe, even though what you made, in that case the transgenic plant, in our case the steps of transforming and obtaining that recombinant polypeptide, was obtained before patent issuance.

The federal Circuit said that is inconsistent with the basic rule for infringement. For infringement of a process invention, all of the steps must be performed either as claimed or by an equivalent. And 271(a) requires use without authority during the term of the patent. And the consequence of that was clear as it is here.

This case lacks any basis for infringement under claim one because those steps occurred before patent issuance. Because the product that was used in the process was made before patent issuance. And because the patentee, just like the patentee here, chose to include that language in the claim by depending on claim one there by writing it into their claim, in our case you are done. Go home. Infringement is not possible .

One of the first three steps of the claim process are performed before the issuance of the patent. That is black letter law that simply is controlling, and we submit on, on all

fours. When you have a process that uses a product made by a process, the steps of making that process, whether they are the steps in Monsanto or the steps of producing and transforming to prepare the recombinant polypeptide here, must be performed by the defendant and must be performed during the term of the patent.

Now, Mr. Groombridge made quite a bit of hay about the plain language of the claim and the fact that, in his view, it supports the idea that these are not process steps laid out in claim one, that produced and transformed are not process steps. And, in particular, he said that they are in the past tense. That they are not using the same kind of language as administering there in the past tense. And therefore that somehow answers the question about when they must be performed.

We just saw the Monsanto case which says "obtained by". Here are four other cases all controlling authority, produced from, from the Supreme Court. It's such identical language to what we have here. A hundred forty years ago there was no problem with the Supreme Court saying produced from requires, as a matter of infringement, that it be produced in a certain way. This is a process limitation. The tense doesn't matter. Formed by, in In Re: Hughes.

Similar language, how are you forming it? How are you making it? Obtainable by in the Abbott case, the en banc case that we just looked at. Purified from, how you are

getting it? How are you making it? Using terms like this in the past tense does not convey, in any way, that the terms of the patent is irrelevant. That the defendant need not carry that out during the term of the patent. In fact, we saw in Monsanto the rules apply.

The question for the Court is are these process limitations, or are they product limitations. And we submit that question has been answered. It's been answered by the fact that Biogen agrees that the process has to have been carried out. It's answered by the fact that there is no dispute that the language confers no structural definition on the recombinant polypeptide. It defines it by a product or by a process used to prepare it rather than a structural characteristic.

The last argument that Biogen made, as I heard it in this sense, is that there is no language that says "the step of" and that somehow that should be determinative as to whether there is a step.

Meaningfully in their brief and today, Biogen cites not a scintilla of authority standing for the proposition that the absence or presence of the word "step" is somehow relevant to the determination of whether something is a process limitation. Again, the same cases produced from, obtainable by, it doesn't say obtainable by the step of acidifying a solution in Abbott. It need not say that.

The question is, is this defining a process or is it defining a product. The tense doesn't matter. The presence or absence of the word "step" doesn't matter. Is it defining a product or is it defining a process? That's what Gemtron says. That's what all these cases say.

So, we then asked the defendant or Biogen's experts -- because at the beginning of the briefing they said this is describing somehow some structural feature of the recombinant polypeptide. So we asked them, does this language only limit the process by which it's prepared. And they said that's right. We said well, what if one were to remove that language from the claim? Is it correct that you wouldn't change or enlarge the structural scope of the recombinant polypeptide using the applicable definition in the patent? The answer was, I believe that's correct.

It could not be more clear in this case that this language produced by a non human host transformed by a recombinant DNA molecule is defining the process by which the recombinant polypeptide is prepared, nothing more, nothing less. Not end product characteristics, just the process.

And for a hundred forty years the law has been clear about what that means. Every patent for a product or composition must identify it so it can be recognized aside from the description of the process for making it. And if it's not, nothing can be held to infringe it which is not made by that

process.

And I heard some argument today, I think, from Mr. Groombridge suggesting somehow that Dr. Fiers made something different. He made something that could be used to treat, whereas everyone else around the world was making something that wouldn't be used for treatment. He was somehow making something different. He had something different in his bottle.

We asked the Biogen expert about that too. Does the patent provide any description of a structural difference between native beta interferon -- and that's what existed before, that's what's in our bodies -- and recombinant beta interferon produced by mammalian host cells within the scope of the claim. Certainly not, he says. The patent doesn't discuss anything made by mammalian cells, let alone the structure of something. Yes.

So, we asked him what about the pharmacological differences? What about the differences in being able to treat patients? Which Mr. Groombridge was now saying was a great breakthrough by Dr. Fiers. Any disclosure whatsoever between the interferon beta that Dr. Fiers tells you how to produce and the native one that's as old as the hills that has been in our bodies since time and memorial? No.

The expert was confused. I am misunderstanding your question. He certainly doesn't claim it, because he hasn't even produced it and tested it. So I don't see how he

could possibly claim it. The idea that we heard here today that Dr. Fiers somehow advanced the art of treating patients with beta interferon, respectfully, is refuted by the entire record in this case.

He did not identify any property that it had pharmacologically that would help him treat patients. He didn't identify any clinical study that he did that showed that what he treated patients. He never even tested the pharmacological properties, according to Biogen's own expert.

We asked, he couldn't have known about any of those differences because he never actually tested it. Right. And just in case they were going to say this was unclear, we said just to be clear, the skilled artisan reading this disclosure would not understand that Dr. Fiers was in possession of any pharmacological or other difference between recombinant beta interferon and natives.

He didn't know of any structural difference and their expert said I think that's correct. There is no definition anywhere in the patent of a structural difference between beta interferon made by Dr. Fiers' method and beta interferon in the prior art. There is no structural description. All that's there is the description of the process used to make it.

And where there is a description of process used to make it, the law is clear about what that means. It's a

process limitation. And where you have a process limitation, the answer is, once again clear, it has to be carried out during the term of the patent and by the accused infringer.

Now, two final points. First, Mr. Groombridge went through the specifications and talked about the fact that in his view there is a significant amount of information there which they, by the way, didn't rely on in their briefing at all, relating to treatment and the method of treatment.

In reality, the law is clear that you look at the specification and see what construction aligns with the specification. What the specification reveals, as we explained in our declaration and brief, is that the entire patent is about a process of making beta interferon. They want to ignore that process.

I don't know what we did this morning. We spent two hours and you heard three presentations about these processes of producing and transforming that they now say somehow they aren't even part of the claim. That this is all about a method of treatment.

Everything we have done here is inconsistent with that, and the specification is inconsistent with that. Ninety eight percent of the specification is about how you make and use the stuff. And the tests that they pointed to in their presentation are tests directed to whether you know you got beta interferon, not tests directed to a method of treatment.

With respect to the method of treatment, all the patent says in column two is, you do what you did in prior art. We are relying on the prior art. And just to confirm that we were reading correctly, we asked their expert, In your review of the patent, did you find any clinical use for beta interferon that Dr. Fiers purports to have invented? No.

Did you find any novel treatment regimen? Any new way to treat a disease? No. Any novel composition, any new thing that he had in his hands that could treat a disease? No. How about any novel diseases that weren't in the prior art that he claims can be treated by beta interferon? No. No. No. No.

Dr. Fiers didn't claim to have invented anything with respect to a method of treatment. And the idea that this claim should be turned on its head so that its sole step in the claim is treating rather than what this patent is really about, which is making beta interferon, is consistent with the specification and frankly inconsistent with the entire record in this case.

Now, there's one other argument that bears addressing and that is the absurdity argument which we heard in the briefs and Mr. Groombridge discussed at length, that somehow the result that defendants urge here is absurd.

Let me start with a factual question. It's not absurd at all. The prior art contained an example, at least one example, of an institution that both made beta interferon

and used it to treat. That was the basis upon which Dr. Fiers was building. That was the state of the art at the time.

It's an article by Carter that we discussed again with their expert. We asked them, this is describing a program at Rosswell Park Memorial Institute in New York. And he said yes. And that institute is both generating interferon beta and administering the treatment of diseases, correct? Answer: That's right. And that was the part of the prior art relating to the treatment of the disease using beta interferon, correct? Answer: Yes.

So the idea that this is absurd, that there is no way that they would have gotten a claim that somehow can't be infringed, is belied by the fact that the people who were doing the treatment of beta interferon at the time, it was sometimes just one institution doing both the making and the treatment.

So it's not an absurd result at all. But, the really issue here is it's not for the Court to decide what an absurd result is. The result is whatever the federal Circuit law mandates with respect to the infringement inquiry that's coming next.

The federal Circuit has been clear over and over. We cited the Smith-Klein case where Judge Posner sitting by designation attempted to construe the claim to avoid an absurd result. And the federal Circuit said no, we are reversing you. You can't do that. This is not a policy-driven inquiry. And

we cite case after case.

The BMC Software case is an example where the patentee came in and said if you construe this claim like the defendants urge, no one could infringe. It's non infringeable. It's a ridiculous, absurd claim. And the answer from the federal Circuit time after time after time after time is who cares. You look at the claim language. You look at the controlling law. And the infringement inquiry is the infringement inquiry. It's not a policy-driven inquiry. And it's perfectly acceptable to have a claim that's not infringed.

In fact, it's no coincidence that they have a claim that's not infringed. You heard today that this patent was in prosecution for 30 years. That's not a coincidence. They tried to get a claim to the DNA sequence. They failed. They tried to get a claim to the polypeptide. They failed. They tried to get a claim for a method of treating using beta interferon without reciting process steps for making beta interferon. They couldn't do that either because that's in a prior art.

THE COURT: So, are you saying that this is the best they could accomplish and it's no wonder that it would have a negative result?

MR. BERL: Yes. That's exactly right. They tried everything in the federal Circuit and the patent office told them time after time, sorry, that's someone else's

invention. You can't have that. So what they end up with is this mongrel claim where they have got a method of treating using a recombinant polypeptide prepared by a given method. The kind of claim that you got in Monsanto and Monsanto said listen, that's not fair. They are not going to infringe that. The federal Circuit said sorry, you are out of luck. I'm sorry, they are infringing. Those are the rules and you have to live by them.

We didn't draft this claim. We heard ourselves and our legal team blamed for coming up with this idea. This wasn't our claim. The master of this claim for 30 years was Biogen. And the federal Circuit said in BMC Software when the patentee made the exact same complaint, here you're giving me a claim that wasn't infringed. The federal Circuit said, we're not doing that to you. You did that to yourself.

Proper draftsmanship, the federal Circuit said, could have avoided this result by simply reciting, as every method in the claim, something that one person would do. So, if they wanted a claim like that, they could have tried to get it.

The fact of the matter is they couldn't get it because that's someone else's invention. The fact that they couldn't get it is not our fault and is not a reason to set aside a century of controlling authority about what it means to define claim by a process.

Finally, with respect to an absurd result, the result that I would submit is absurd here is the idea that liability should be triggered against the defendants. When you heard today that the transformation that they conducted, that Serono conducted, occurred in 1981. Absent that transformation, if that transformation didn't occur, according to Biogen itself, there is no liability here. That transformation has to have occurred.

They are asserting that whenever the transformation occurs, whether it's 1981 or the year their patent expires in 2026, defendants are somehow liable as a result of that transformation.

THE COURT: Well, they do have a conceptual difference. They are saying this is a one-step claim. And the one step is the method of administering this. Whenever it was done, whenever it was transformed, so be it. That's their argument.

MR. BERL: But, if it's really a one-step claim, then they wouldn't need to prove that it was ever transformed.

THE COURT: They are saying it's described by transformed and produced.

MR. BERL: And that those are prerequisites in order to prove infringement.

THE COURT: To describe what the substance is that is being administered. As best as I can discern of the

argument, and I hope I am doing justice to it, but that's the way I heard it.

MR. BERL: That's the way I heard the argument too. The problem with that is that the only way that describes the recombinant polypeptide that we just saw is by the method of making it. It doesn't describe it in any structural or physical sense.

THE COURT: I mean I understand there is a fundamental difference in terms of how you view the language and the implications thereof.

MR. BERL: And therefore because it's described by the process, that process, by their own admission, has to have been carried out. They dispute who and when. But, they agree, they have to come into court one day and show that someone did this transformation sometime. And that sometime, according to them, could be anytime between when they filed their patent application in 1980 or maybe even before, and 2026.

That is a 46-year term during which people have liability as a result of the transformation they did. Where absent that transformation, no liability would ensue.

THE COURT: Are we making an absurd result argument?

MR. BERL: That would be an absurd result. I am not suggesting you should consider it after I just told you the

federal Circuit doesn't allow you to do that, but as a practical matter that is every bit as absurd as that scenario that Biogen suggests.

THE COURT: I am not suggesting that that is what I am concluding. I am just simply asking --

MR. BERL: That is what I am suggesting. So, with that, if you have any questions, I would be happy to answer them.

THE COURT: I am fine. But what I am going to suggest is we take a five-minute break. We will give our court reporter a chance to rest and then we will come back. After we come back, what will we have left?

MR. BARSKY: I am going to briefly address the history, the file history, the prosecution history, and I believe then we are finished.

THE COURT: Okay. Then what I would like to do is just a short give and take on some points that I view as meeting that and then I think we should be wrapping up.

MR. BARSKY: Sure.

THE COURT: Thank you.

(Whereupon a short recess was taken.)

THE COURT: I just want to follow-up with one question for counsel before we start in. With respect to the last argument we were making in terms of what was left for the plaintiff to proceed on, after the five claims had been severed

by the patent office, they sent them back, indicated that they should be presented separately. So why do you think the patent office would permit the claims to be severed if there was no support for a method of treatment claim?

MR. BERL: The question of whether there was support for method of treatment claim in the specification is separate from the question of whether a method of treatment claim is, in fact, patentable.

The law is clear that a restriction requirement is not a rejection on the merits. In other words, it's not the patent office evaluating the requirement for patentability like written description and novelty and non obviousness and saying, you know what, you can get a claim on this.

It's simply a statement you have multiple inventions, you have to split it.

THE COURT: But, by asking that to be separated, wouldn't that indicate that they believe that there were five separate inventions to proceed upon?

MR. BERL: That there were five different classes of invention and this is done, in part, based on what the search terms are.

THE COURT: So, if Dr. Taniguchi, if he had the DNA aspect of it and the fifth claim was the method claim and it was method of administration, you know, plaintiff here is saying well that's what was left, that is what they proceeded

with, that's what they have here and they have a step of administering and they are describing the substance that is administered.

And I understand that defendants have a very different view of, you know, what we are proceeding on. But, if the claims were, in fact, requested by the patent office to be severed into separate inventions with the fifth one apparently being a method of treatment claim, why would this not be a method of treatment? Why would you perceive it to be something more than that invoking the process?

MR. BERL: Okay. And I think the quick answer to that is if the claim ended after the orange on the board, if the claim ended after recombinant polypeptide, then they would have a typical method of treatment claim.

THE COURT: I'm sorry, if it ended after polypeptide?

MR. BERL: Yes, because then they would have a method of treatment claim and they do have a method of treatment claim. But in that case it would be a method of treatment of cancer.

THE COURT: Your argument is any descriptive language reduces their claim as opposed to assists them by providing a description as to what the substance is, which is their argument.

MR. BERL: That's the all elements rule. Every

limitation of the claim narrows the claim. Every time you add language, you are narrowing the scope of the claim. The question is how.

THE COURT: How would they -- and this is just a background question, how would a infringer, someone who is in this area, know what to administer if it was just ending at polypeptide? How would you know what the substance is to be protected by the patent?

MR. BERL: Well, they could have said beta interferon polypeptide or they --

THE COURT: So then it couldn't have just ended at recombinant polypeptide.

MR. BERL: It could have ended at recombinant polypeptide and then had A what is intended A which describes the DNA sequences that the recombinant DNA molecule would have. That would have been a method of treatment claim that would have said I am claiming treating cancer by using a recombinant polypeptide that was made from a DNA sequence basically with these oh.

THE COURT: If he says that was made then we are talking about produced and perhaps even transformed.

MR. BERL: They could have alternatively said the recombinant polypeptide with the following sequence and had the sequence in Figure 4 of the claim. That would have defined structurally what they were administering.

Rather, what they did was they defined it by the process used to make it with explicit process limitations.

THE COURT: Then back to the fact that the patent office did actually accept this and it did end up with five separate inventions, what is deemed to be inventions to begin with, it severed them off and it left this as a method claim.

MR. BERL: And it is a method of treatment, but it's a method of treatment that is limited by the process by which the recombinant polypeptide is prepared.

The patent office did not say you can have any method of treatment claim in the world. They just said that's a different class of inventions because we searched for it differently and it's a different kind of invention.

THE COURT: But, if the DNA was already protected by a separate patent, then how could this be anything else beside descriptive matter?

MR. BERL: Well, because they are not claiming the DNA, per se, or they are not even claiming per se here is a method of making polypeptide by producing and transforming. That would be a separate claim. They could have a claim that's a process of preparing a recombinant polypeptide by producing from a non human host and transforming with the recombinant DNA molecule. That's not this claim.

What they have done here is it's a method of treatment using recombinant polypeptide made in a certain way.

So they have, in a sense, combined different parts of what they claim to have invented into a single claim that has all these aspects.

And according to the federal Circuit, the Supreme Court, you can't ignore any of those aspects in construing the claim. They are all limited by, in this case, the process steps that they recite in the claim.

THE COURT: Okay. Thank you.

Go right ahead.

MR. BARSKY: May I just address a couple of points to that, your Honor?

THE COURT: Sure.

MR. BARSKY: And that is this, I think in the course of this discussion, you know, unfortunately I think far too much weight is being given to this restriction requirement that issued in 1982.

And the reason for it is is that all the patent office was saying at the time, and Mr. Groombridge put up Section 121, 35 ISC, and all that Section 121 says is that once you divide applications into separate claimed inventions -- and that's what the patent office, by the way, was saying in 1982. Not that there were five separate inventions as the slides stated.

THE COURT: But, in any event, it's my understanding the doctor obtained the DNA patent. And right

now Biogen is currently paying a license with respect to that. So, the DNA was covered by a separate patent. So, the DNA wouldn't thereafter or shouldn't be covered by the same, I mean, the same DNA description here shouldn't be the same one contained in the patent on the DNA that the doctor obtained.

MR. BARSKY: After the restriction requirement, your Honor, what was clear was that once Dr. Taniguchi was entitled to a patent on the DNA, no one else would be entitled to a patent on the DNA.

THE COURT: Well, then my question is, wouldn't that support that the DNA reference in here is descriptive rather than a process? That's the question.

MR. BARSKY: If by DNA -- I am not certain exactly what your Honor is referring to by the DNA reference. But, if your Honor is referring to these inserts here --

THE COURT: I am referring to the entirety of the produced by a non human host transformed by a recombinant DNA molecule comprised of a DNA sequence selecting in the group consisting of A, B and so on.

MR. BARSKY: Yes. So, if Dr. Taniguchi were entitled -- and no one knew this in 1982, of course. This was long before that interference proceeding ever began, this restriction requirement. That the interference didn't occur until the late 1980s. It wasn't finished until the early 1990s.

So, at the time, 1982, this was just within a year of the United States application being filed. All the patent office said was look, you're claiming five different classifications of inventions. And for the patent office, we have to divide those out because you can only pursue one classification in each application, a very common practice.

THE COURT: Understood. But, what I am working with now is with the DNA aspect of that, took on its own life through a separate patent not possessed by the plaintiff here. Because Dr. Taniguchi received the DNA patent.

MR. BARSKY: Ultimately, yes. That's correct.

THE COURT: Okay. So then what was left, there were five separate potential inventions that were addressed by the patent office.

MR. BARSKY: And there is no question that Dr. Fiers was entitled to pursue, and he did receive a method of treatment claim. And we are not arguing, and never have, that Dr. Fiers and Biogen did not receive a method of treatment claim. We can see it in black and white in claim one of the '755 patent.

THE COURT: You are saying it would not be inconsistent if he were to receive a method of treatment claim and that Dr. Taniguchi received the DNA patent.

MR. BARSKY: Yes. And it would also not be inconsistent, in fact, the reason it took 30 years is because

at the end, we know he couldn't get the DNA claim. We know he couldn't get the protein claim. We know he couldn't get simply the method of producing this recombinant DNA, excuse me, this recombinant protein. And so what he ended up with at the end was this amalgam that Mr. Groombridge says is routine and typical and claims are written like this all the time. It's exactly the opposite in my experience, your Honor.

What we ended up with is this amalgam where he gets a method of treatment claim with a particular composition that is made in accordance with a specified process which process must be carried out in order to practice the invention.

And the answer to the question that your Honor asked just moments ago is simply this: That he could not have received this claim without building into the limitations and building into the scope, the very process by which that recombinant DNA -- recombinant protein is produced and expressed.

And my comments are going to be directed to the prosecution history. And one of the things we see in the prosecution history, your Honor, is that Biogen justified its entitlement to a patent in this case by distinguishing Biogen's claimed invention over the prior art by those very processes by pointing to the fact that it was those processes which entitled Biogen to an invention.

And that loops me back to your Honor's very first

question at the beginning of this Markman cycle which is with respect to transformation and production, what are the guideposts that the Court can look to to determine whether transformation and production are processes that are required by the claim. And that is precisely what I want to direct all of my comments to, your Honor.

THE COURT: Okay.

MR. BARSKY: Because the answer to that question is first we have already talked about the claim language and the specification. But if the Court is looking for guideposts and additional guideposts, here they are. The Court can look to how does Biogen understand its invention.

Back in the day when it was still seeking to procure a patent from the patent office, how did the examiner who spent a career working with Biogen's patent applications, understand that claim? What did Biogen tell the patent office about what was required by its claims when it was seeking to receive a patent? And how does that compare to Biogen's position today, now that they have a patent? And what was Biogen's position before, when it was seeking to persuade the examiner to allow a patent before billions of dollars in sales of Avon ex and Betaseron and Rebif were at issue. And before Biogen had any incentive to spin the scope of its claim.

And that is why, your Honor, those are the guideposts that the Court can look to and that I am going to

address now. Because what this claim construction hearing really is about ultimately, your Honor, is fundamental fairness. It's the principle that, as we will shortly show the Court, it's the principle that if you obtain a patent by representing to the patent office --

THE COURT: I know you are going to argue that you should be held to what you represented. And I certainly understand your argument from the briefing and I have studied the prosecution history as best as I can study that.

So, if you have certain guideposts for me that are specific based on the prosecution history, I would think that would be very important.

MR. BARSKY: And I will get right to that then, your Honor. But, I did want to start just by reiterating, this is why we look to the file history. And, in other words, it is to look at how the inventor understood the invention and how the patent office understood the invention. And what was represented about the scope, the very issue your Honor has acknowledged is now at issue. What was said about the scope at that time.

So, that's why I say this is about fundamental fairness. And so we all know what the issue is here. The issue is whether claim one of the '755 patent -- and before I go any further, may I approach, your Honor?

THE COURT: Sure.

MR. BARSKY: I have prepared just a book of excerpts. I have prepared just a book of some of the excerpts from the file history that are already in the record. And then I am going to be referring to during or that I may refer to during my comments. But, because we are using the power point presentation, I want to make sure that if the Court wants to see a context of anything that we are pointing to, or more of the document, it has the ability to do that.

THE COURT: That sounds good. Thank you.

MR. BARSKY: In order to make it as confusing as possible for the Court, the exhibit numbers don't correlate necessarily with the tab numbers.

THE COURT: I see. Okay.

MR. BARSKY: So, I will be indicating what the, both the exhibit and tab numbers are for the record.

So, we know what the issue is here, and that is, does claim one of the '755 patent recite multiple process steps, or does it recite a single process step. I take it your Honor is well versed, well versed in what that issue is. So I don't need to recapitulate it. But, I will say this, that if Biogen is right and the only process step in claim one is the step of administering, then the litmus test for whether this is accurate or not is to see whether Biogen ever referred to a single claim as having multiple process steps.

Because your Honor knows from the study of the --

THE COURT: Well, I think plaintiffs have already said they had one instance of that and the attorney made an error in this regard.

MR. BARSKY: Yes. That's right. In fact, that's not actually accurate and I am going to explain why momentarily.

But, the specific issue arose -- arises out of, in the first instance, out of this office action from September 23, 1996, your Honor. And this is tab four, exhibit -- tab four in the book, exhibit 7. Here is what Mr. Groombridge said about what the examiner was doing here in making this comment that the positive process steps, I think he said, in this group of claims are identical to the positive process steps in this group of claims.

And I wrote it down because I wanted to make sure I got it right. What he said was that the examiner was saying here, that you can't get two patents on the same thing. We all agree that the examiner was referring to two separate co-pending applications, the 723 application and the 930 application. The application which ultimately matured into the '755 patent.

The examiner went on to talk about the two processes in those claims, and pointed out that the actual process steps of the two sets of the claims are the same.

Now, here are the two claims that the examiner was

talking about when the examiner said that they have the identical positive process steps and which we have obviously indicated is a reference to the production step and the transformation step as being identical. Biogen argues no, it's the administration step that occurs at the very beginning.

If we go back, your Honor, so, what Biogen's argument is is that the reference to positive process steps is to multiple occurrences of a single step in co-pending claims. Multiple occurrences of the administration step in co-pending claims.

Let's take a look at what Biogen's response was. And you saw this earlier because Biogen showed it to you during its presentation.

Biogen, referring to a single claim, claim 31 of the 658 application, says that claim also recites those positive process steps. This was the remark that Mr. Groombridge said was a mistake. It was a one off. It was a one time problem that never repeated itself. And we are going to test that in a moment.

But, I want to just put this in context, your Honor, because the examiner was looking at the 723 and 930 and saying the positive process steps in those two co-pending applications are identical.

Biogen comes back and says well, actually, your Honor, we have a third co-pending application, all right.

That's the 658 application. And that third -- and in that third application claim 31 recites those positive process steps. So let's take a look at that claim, claim 31 of the 658 application. And you will see that it has the identical production, the transformation elements, as well as the administration element.

And at this time, and you heard this before but I will reiterate it because it is an important point, the language, the step of administering, was not in this claim.

THE COURT: It was added. I understand.

MR. BARSKY: And what's significant about that, your Honor, is this: That long before that phrase, "the step of" was added to this claim, the examiner, we saw the examiner's comments moments ago, the examiner looked at this claim and saw positive process steps. Didn't need to see the word "step of" in order to find positive process steps in this claim, which is incompatible with Biogen's repeated insistence in its briefs about how the only step of anywhere in the '755 claims is the step of administering and therefore that's the only step. So, we will come back to this in a moment.

If, your Honor, by the way, I mentioned the -- I'm sorry, that was tab 5, Exhibit 8. And I was just looking, your Honor, I believe it was, hold on one second, I believe it was page 2. Excuse me. It's page 3.

If we flip the page, the first, first was this

reference then to the 658, the single claim from the 658 application that Biogen represented had those positive process steps, which we contend are clearly the production and transformation steps.

If you turn the page in that exhibit, your Honor, you will see that Biogen then directs its attention, and this is at the top of page 4, internal page 4.

THE COURT: Oh, yes, I have it.

MR. BARSKY: Okay. So, this is on the top of page 4, tab 5, Exhibit 8. Sorry.

THE COURT: No, I'm good with it.

MR. BARSKY: Now Biogen is talking not about the 658 application and claim 31 of the 658 application. Now Biogen is talking about amended claim 31 of the 930 application and amended claim 31 of the 930 application issued as claim one of the 755 patent, the very subject of this claim construction proceeding. I just want to make sure your Honor is --

THE COURT: I am with you.

MR. BARSKY: All right. Thank you. What is recited here, your Honor, is that Biogen says about that single claim, once again, that it has multiple, positive process steps. It says that the preamble of amended claim 31 now recites the several intended uses for the positive process steps claimed.

So this wasn't one instance of a reference to

claim 31 of the 658 application. This wasn't a mistake or an oversight that we are arguing should somehow warp the construction of this claim and the determination by this Court as to whether or not this claim requires these processes. This was a very clear and consistent reference to single claims, single Biogen claims as having multiple positive process steps.

And the significance, once again, is this was the claim, this is the claim that is now at issue, so the claim 31 now claim one of the 755 patent. So here is what it looked like at the time, claim 31 of the 930 application. See the production and the transformation steps. And here is the office action that the examiner was referring to, once again, about claims 31 through 34.

Now, one of the things that Mr. Groombridge referred to, and this is in slide 41. I am afraid I am going to need to refer you, your Honor, to the Biogen book for a second.

THE COURT: To which one?

MR. BARSKY: This is the Biogen book and it is slide 41. Let's start here. I would put it up if I could. I'm sorry.

THE COURT: No, that's okay. I have it right here. All right.

MR. BARSKY: So what struck me about this was not the excerpt from the file history, so much as it is the bullet

point title, because this was a claim that was made in the briefs. But, the claim made by Biogen was that there was some amendment that was made and that was the adding of the language or the phrase "the step of" to administer.

And this suggestion has been made that that amendment was made quote to make clear that the only method step is the step of administering to a patient. There is nothing in this file history that says anything like that anywhere. And, in fact, as we saw, the examiner reviewed this as being, as being steps regardless of whether the language "the step of" was in the claim or not. And there is nothing to suggest anything about the intent or the reason even for adding "the step of" administering.

And, in fact, administering, as Mr. Groombridge himself just said, is just as much a step when it says simply administering as when it says the step of administering.

So, this amendment had no impact whatsoever on the substance or the scope of his claim. And to suggest that there was some intent here, that the reason that amendment was made was to make clear that this was the only step, first of all, it doesn't say the only step anywhere. And second, there is no support for that. And, in fact, as we just saw, Biogen looked at its own claims and saw multiple positive process steps in single claims.

THE COURT: I just want to stop you one moment.

It says defendant's exhibit 7 over there. What should that be in my packet here?

MR. BARSKY: Defendant's exhibit 7 is tab four. And I can direct you to where that language occurred on page 3 right underneath the blocked quote.

THE COURT: I have got it. So now just to reiterate, is it two places or is it more places where you are stating that the plaintiffs referred to steps versus step when there was only one claim left?

MR. BARSKY: No, there are actually multiple times when they use the phrase "positive process steps". What I am saying --

THE COURT: If there's multiple claims, I understand where that could come from. But if there are not multiple claims, are you alleging twice or more than that?

MR. BARSKY: That occurred twice, your Honor.

THE COURT: And there's a March 24, 1997 instance. And what is the other one?

MR. BARSKY: It's in the same exact paper.

THE COURT: It's the same paper, so it's one document?

MR. BARSKY: Yes, it is, your Honor. So there were two instances in which Biogen referred to a single claim as having multiple positive process steps.

Now, you heard Mr. Groombridge address what Biogen

contends is this anomaly because claim 32 only has the administration step and there is no reference to production or -- explicit reference to production or transformation in claim 32.

First of all, there is no anomaly there, and I will explain why in a second. But, more importantly, any ambiguity that may arise by the fact that the examiner here -- and this is the language that gives rise to Biogen's claim. And your Honor will see that claim 32 is not called out individually obviously. It's just among the set of four claims that the examiner treated in one fell swoop as claims 31 to 34.

But, any ambiguity that may arise out of that is swept away by the fact that Biogen, in referring to single claims, referred to single claims as having multiple, positive process steps. And Biogen in its papers -- today was the first time we heard any explanation as to claim 31 of the 658 application -- it didn't address that issue at all in its papers. It ignored that and it went to what it claimed was this anomaly by the examiner's statement.

Today was the first time Biogen, to my recollection, ever took the position that what happened here was a mistake by the prosecuting attorney. So, instead of addressing Biogen's own statements about single claims having multiple, positive process steps, they point to this supposed anomaly.

And here is why there is no anomaly at all, your Honor. Claims 31 to 34 are a basket of interrelated claims. And this is where patent law and prosecution gets really fun, your Honor, because the claims 33 and 34 are dependent claims. And they depend, meaning that they descend from or that they incorporate all the elements of two independent claims. Each of them does that.

So, claim 33 depends alternatively from claim 31 or claim 32. And claim 34 depends alternatively from claim 31 or claim 32. So, you have these cross links between the claims.

The examiner, as we saw, chose to treat that basket of interrelated claims in one fell swoop. Could he have been more precise and pointed out in two pages rather than in that one sentence what steps were in each of those claims? Sure. But, the fact that he didn't is not -- doesn't raise any ambiguity or anomaly. That's not, as I say, dispelled by Biogen's own reference to its own claims as individual claims as having multiple, positive process steps.

Now, I want to address an issue that Mr. Groombridge raised towards the end of his presentation. He argued that what we are really arguing about here is a disavowal of claim scope or a waiver, and that there is a higher evidentiary standard that we should meet in terms of the clarity that is required in those circumstances, and that's

exactly wrong.

Disavowal arises when you have a claim that is directed to a specific scope. And the argument is --

THE COURT: You can go ahead.

MR. BARSKY: Disavowal arises when a claim has a specific scope. And the argument is that the applicant in seeking the patent from the patent office, disavowed part of that scope. So the scope may be a genus of compounds, or the scope may be elements one through ten, or the scope may be a class of proteins. And on its face the argument would be, the disavowal argument is yes, the claim on its face extends to all of those things, but you disavowed a part of it in order to get your patent. So you are actually only entitled to less.

That's what disavowal is here. We are not arguing disavowal here. We are not arguing waiver or anything like that. What we are arguing is that the plain meaning of this claim, from the language of the claim itself, to the specification, to the file history, all support a single construction --

THE COURT: I understand your point.

MR. BARSKY: Okay. Two points, your Honor.

The federal Circuit -- or two cases. I am just very quickly. The federal Circuit rejected exactly the argument that Biogen makes here in the 800 Adept case that is cited in our papers.

THE COURT: Can you give me the full cite just once again?

MR. BARSKY: May I come back to that, your Honor?

THE COURT: Sure. Unless someone else has it.

MR. BARSKY: We will get it, your Honor.

MR. BERL: It's 539 F 3d 1354.

THE COURT: Thank you.

MR. BARSKY: Don't go away, Mr. Berl. The Schindler Elevator case.

MR. BERL: 593 F 3d 1275.

THE COURT: Thank you.

MR. BARSKY: Thank you. And so in both of those cases the federal Circuit rejected exactly the kind of argument that Biogen is making here about this disavowal notion. And it rejected the suggestion that you can't hold the patentee to the patentee's words during the prosecution. Because in those cases, as here, the argument was not that there was a disavowal of scope, but rather that the prosecution history was being used to support the claim construction demanded by the plain language of the claims and the specification.

That's the single point that I wanted to make on that. Thank you for the time.

THE COURT: Thank you. Thank you very much.

MR. BARSKY: I'm sorry, I am sorry if I suggested I was done and I know we have been going --

THE COURT: What else do we have because we are going way over time.

MR. BARSKY: I aware of that, your Honor. Let me try and be very quick and get very quickly through this because this is very important.

THE COURT: Sure. Go ahead.

MR. BARSKY: I don't want to give it short shrift.

This wasn't the only time, Mr. Groombridge suggested, that this was just this 1995 to 1997 chapter in the history of the interchange between Biogen and the patent office.

In fact, your Honor, as late as 2004, here is what the examiner said. And this is the examiner, by the way, your Honor, who has, as I mentioned earlier, specially trained, has spent much of his career working with the Biogen applications. And if the Court is looking for someone with no ax to grind and with no dog in this fight who has enormous intimacy with what Biogen's patent applications are directed to, I would suggest that the examiner is just one such person.

And here is what the examiner said in 2004. This was in a chapter of the history.

THE COURT: Hold one moment. I see that there's exhibit 12 which translates to tab 6 but I am not on tab 6 right now and I don't see that.

MR. BARSKY: It is tab 6 and it's the page 3, your Honor. I'm sorry, I should have waited for your Honor to get that.

THE COURT: I see. You know what, a different section is highlighted. Okay. I'm there.

MR. BARSKY: Here is this examiner with enormous familiarity with the Biogen file history and the patent application, no ax to grind. And what he does in May of 2004 is he looks at the claim that the Court is now charged with construing, or at least the predecessor of that claim, claim 31 of the 930 application, and says that claim is -- I'm going to reject that claim under a section of the Patent Act called 102(g).

In the course of doing that, your Honor, here is how the examiner characterizes those claims. The examiner says that the claims require the use of the DNA to produce the polypeptides.

Your Honor, we talked about scope earlier. At the very beginning of this proceding your Honor brought up the issue of scope and we have all been talking about it. That's precisely what the examiner is talking about here . And he is not saying, he is not saying, as Biogen has suggested, that the claims require the use of a recombinant polypeptide, a product having certain characteristics and here they are. He is saying that the claims require a process, the use of the DNA to

produce the polypeptides. Clear as day.

This was never the subject of any substantive response by Biogen. They suggested at one point that we took this out of context because we didn't quote what it was responsive to. But, they never suggested there was any ambiguity about this, nor could there be.

And, your Honor, Biogen did respond to this. They did say well, 102(g) is inappropriate to invalidate those claims because these two referenced patents, these two Sugano patents that are referenced in that first sentence, are not 102(g) prior art. And you know what, it turns out they were right. It wasn't prior art.

But they never once said to Mr. Martinell (ph) you know, we find it surprising that after 25 years you don't understand the scope of our claims. Our claims don't require the use of the DNA to produce the polypeptides. They never said that and they had many opportunities to do so.

I will just skip forward very quickly because there was a number of exchanges after this time just in this one chapter of the file history on the 102(g) rejection. And these are both office actions and responses by Biogen. Never once did Biogen say that you've got our claims wrong. They don't require the use of the DNA to produce the recombinant polypeptide.

THE COURT: Okay. This chart or page appears

where?

MR. BARSKY: This is in our file -- this is not in the booklet.

THE COURT: It's not in my packet.

MR. BARSKY: No. The booklet is just the file history excerpts, your Honor.

So, just to sum up this point, the examiner said the claims require the use of the DNA to produce the polypeptides.

THE COURT: You know what, what you can do is tomorrow when you can get it together, if you want to just send us, overnight those, that would be fine if you that. I have those sheets, that hard copy sheets, or is it contained in one of these other compilations? Your presentation.

MR. BARSKY: Oh, yes.

THE COURT: Is it contained in one of these other folders? No?

MR. BARSKY: Are you talking about this slide, your Honor?

THE COURT: Yes, that slide.

MR. BARSKY: This slide is in the spiral book of our presentation.

THE COURT: So what you can do is anything that I haven't received from you, you can print a copy and send it to us.

MR. BARSKY: Sure.

THE COURT: Okay?

MR. BARSKY: Absolutely. Did your Honor want me to go on then?

THE COURT: Sure. I am just saying I have everything else from all the slides, but this is first section that I don't believe I have in hard copy, correct? Because I received everything else.

MR. BARSKY: No, we did give the Court a copy.

THE COURT: I just asked that question. Because these are the ones -- I just said are they contained here.

MR. BARSKY: I'm sorry I confused the Court. My fault, your Honor. The booklet is the book of file history excerpts.

THE COURT: This is in?

MR. BARSKY: The slide is in the color power point printout. I'm sorry.

THE COURT: That's all right. Okay. I'm ready.

MR. BARSKY: I'm sorry, your Honor.

THE COURT: Not a problem.

MR. BARSKY: So, we are urging, your Honor, in summary, a construction of this claim that is faithful to the plain language, the specification and the file history. We have looked at the language, and the Court is familiar with the language of the claim. We have looked at the file history and

what the examiner has said with respect to the claims requiring the use of the DNA to produce the polypeptides.

And that was a reference, your Honor, just to close the loop on this discussion, that was the reference to claim 31 as it was then pending and had obviously those identical production and transformation elements.

And that claim then issued as claim one of the '755 patent with those same production and transformation elements. The same steps that we believe the examiner was clearly referring to as when he indicated that the claims require the use of the DNA to produce the polypeptides.

So, I have done that already. I am going to skip over -- well, I will point out this, there was a reason why Biogen did not, did not ever have to tell the patent office or the examiner, you have got my claims wrong. And that is because it was completely consistent with their point of view.

We saw that in the references to the single claims including claim one of the 930 as having multiple positive process steps. But, we also saw it when Biogen summarized what it considered to be its invention in the 930 application long after the restricture requirement 15 years earlier.

What Biogen said in this supplemental information disclosure statement to the PTO, and this is exhibit 13 which is tab seven, your Honor. And it's at page 25. I know it's a long document.

THE COURT: I have it.

MR. BARSKY: What Biogen said at the time -- and again, this is in order -- this is as part of a discussion, as your Honor can see, in which the applicant Biogen is trying to distinguish what it did from the prior art. And what the applicant said was that we, Biogen, won the race to express active recombinant interferon beta polypeptide, the subject matter of the instant application.

So, just to finish up then, we are proposing a claim construction here that is faithful to the claim language. That's faithful to the specification or title of the patent, the technical field of the invention where it's described, in part, as being a process for producing human fibro active interferon like polypeptides. And you saw this, actually you saw this section earlier during Biogen's presentation, as I recall. And what it points out is that the processes of this invention --

THE COURT: I'm sorry, this is from what document?

MR. BARSKY: I'm sorry, I should have pointed out. This is exhibit 1. It's a '755 patent. It's exhibit 1. That's in the book of excerpts as well, your Honor.

THE COURT: Okay.

MR. BARSKY: Same is true, obviously, of this document. And so here Biogen is saying that the processes of

this invention may be used in the production of polypeptides.

The disclosure section of the invention in this portion is talking about how a host is transformed. That's an obvious typo. The host is transformed to produce a polypeptide.

So we have already walked through the file history. I don't need to recapitulate that. But we obviously saw two instances in which Biogen referred to single claims as having multiple, positive process steps. We saw the examiner saying very explicitly that the claims require the use of the DNA to produce the polypeptides.

And so I will end where I started, your Honor, this claim construction hearing really is about fundamental fairness. Because it is so clear that Biogen told the patent office one thing when it was trying to distinguish the prior art, when it was trying to procure the patent, and it is telling this Court an entirely different thing now, now that there is so much at stake.

So, our point and the punch line of all of this is that we are just simply asking the Court to say about this claim what the examiner said about the claim and what Biogen said about the claim before this patent issue, and that is that it has multiple process steps. And those steps include the use of the DNA, for example, in the words of the examiner, to produce the recombinant polypeptides.

And I thank the Court for its endurance and for hearing me out. I have lost my client. I have missed my plane. But, I am glad I had the opportunity to finish what I started. So, thank you very much.

THE COURT: Sounds good. Thank you. You can certainly respond.

Is anyone else desiring to speak on the part of the defendants? No. Okay. There is a lot in there to respond to.

MR. GROOMBRIDGE: Right. And I will be happy to respond to anything the Court feels might be helpful.

THE COURT: Why don't you begin and I will ask a question of couple.

MR. GROOMBRIDGE: So, the file history. In all these 28 years he says there are two instances where he said Biogen used the term "steps" plural. The second one is not a mistake. All right. It's in that same document, the March 24, 1997 response. That one is correct. And the reason why it's correct is because this may perhaps be helpful in this fog of what was going on there.

What the state of play at the time were there were three parallel applications, the applications that Mr. Barsky mentioned. And the difference between them -- the only difference, and this is the issue that the examiner raised, he said you have got three parallel applications and one of them

is directed to immunomodulation.

THE COURT: So we are back to the March 24, 1997 --

MR. GROOMBRIDGE: Exactly. Yes. So, at that time the three applications, they are on three different diseases. Immunomodulation is one then pending application. And treating viruses is a second then pending application. And treating cancer is a third then pending application.

The examiner said, well, you can't have three patents because the only difference -- and this was the whole point of the examiner's raising this -- the only difference is the intended use. The step of administering to the patient in each of these three applications is the same. And it's only a mental difference that the physician might have with why I am actually giving you this drug. What disease I think you are suffering from. And that means there is no difference in the actual methods. And that was what spawned this dialogue. And the examiner said that about two of these applications. Biogen pointed out that well it was actually three of them, and that was where the mistake was made.

But then on the next page of the document, what Biogen says is the examiner fixed this problem. What we are doing is combining all three diseases into one single claim. So we are just going to have one claim that talks about immunomodulation treating viruses and treating cancer. And

that is why the Biogen word says the steps plural have been combined into one claim because he is taking the step from each of the three patent applications and merging it together. And that's why he uses the word plural, the steps plural. And that's why it is not a mistake. It's correct.

There's only one place where it was a mistake and it was on the page before that. And the Court will appreciate, given what we have heard just over the past two hours, of how complicated all of this is and how easy it would be to make such a mistake.

THE COURT: You are saying on page 3, that one is actually accurate?

MR. GROOMBRIDGE: That's exactly what I am saying, your Honor. Now, the --

THE COURT: I mean, not accurate, but it was just referred to as --

MR. GROOMBRIDGE: It was intentional and it's not wrong because he is referring to three different steps that have been combined together into a single claim.

THE COURT: So page 3 is the only one you are actually saying is incorrect.

MR. GROOMBRIDGE: Again my colleague says, tells me on page 4. Since he has the benefit of the document in front of him, I will inure to him.

THE COURT: At the bottom of three and the top of

four?

MR. GROOMBRIDGE: The correct statement is on page 4 and the incorrect statement is on page 3.

THE COURT: Okay.

MR. GROOMBRIDGE: The fact remains it's one statement. Now, in 28 years of the prosecution, I mean frankly if it where two statements, they are in the same document. I don't think it changes qualitatively.

You know, Mr. Barsky said that well, they are not arguing clear disavowal. On page 12 of defendant's responsive brief it says, however, even if the Court were to find that the plain meaning of the tort, the claim supported Biogen's position, Biogen's statements constitute a clear disavowal of its present argument that produced and transformed the terms in our process step.

So, you know, look, it's totally okay for your positions to evolve, but we had understood them to at least until just now to be arguing disavowal. Whether it's a disavowal or not, that doesn't change the legal principle which is the one on our slide 18 citing Phillips saying where the federal Circuit says the prosecution history often lacks the clarity of the specification and is therefore less useful.

And we submit, your Honor, that what we have just heard is pretty much a good demonstration of lack of clarity. I mean I don't mean to be facetious, but I sort of hold this up

as exhibit A as lack of clarity.

It's a complicated thing. It's susceptible to a number of interpretations. It's not a basis on which to say I am going to whittle back the scope of this claim to nothing. Now, the two other things from the patent prosecution that I would like to refer to -- before we leave that exchange, it was in order to cure this ambiguity that the Biogen prosecution lawyer put in the word "the step" precisely to make it clear. All right. And we submit, your Honor, that's what he did. That's why that language was added.

Fast forwarding to May of 2004, May 28, 2004, where the examiner says I am going to reject you over the DNA -- and this, your Honor, by the way, is the exact issue that the Court raised about well, if Taniguchi got a patent on the DNA, how can, you know, what is the implication of that. And this was debated and ultimately this very accomplished patent examiner agreed, I don't think that is a problem. That's how come this patent issued.

But, the language that was called out there where the examiner says the claims require the use of DNA to produce the polypeptide used in the claimed method that we don't -- I don't think it was disputed with that. That language was silent about who would do it and when it would be done. All it refers to is the word "produced" in that claim. And no one disagrees with this that that's required. The disagreement is

over who has to do it and when. So we would just say it's not -- it doesn't cut one way or the other.

The last item from the patent prosecution that Mr. Barsky raised was that -- it's tab seven in your Honor's book at page 25, the lengthy document, where he says well, back in the 1990s, Biogen says we won the race. And I would say, yes, that's exactly right. That language is precisely what we are talking about here because Mr. Barsky read this but he didn't emphasize it, the word "active". We won the race to express active interferon beta, and that's precisely why we, Biogen, get the medical treatment patent.

And the, I guess I would go back. The only other things that I would want to touch on here, your Honor, are when Mr. Berl was speaking he talked at some length about the Abbott and Monsanto cases. And the Abbott case merely stands for the unremarkable proposition, which I think I mentioned in my opening remarks, that a product by process claim is only met if the product that's alleged to infringe was made by the process. And there has been some outlying case law, some of it authored by the judges of the federal circuit who dissented, to which the Court alluded, that called that principle into question.

We are not relying on that. We are not challenging it. We never would. We are not saying that a dissent was right in that case. All that Abbott says is that product by process claims apply to a product made by the same

process.

Even if this is a product by process claim, the composition part of it, we are happy to take our lumps on that. We will prove up that this was made by that process. It just doesn't have to be done during the term of the patent or in the United States. And there's nothing in Abbott that's contrary to that.

Monsanto, you know, the real issue with Monsanto is that the wording of the claim is different. That Monsanto, the claim at issue specifically has four steps called out expressly. And what the federal Circuit held in that, it rejected Monsanto's argument that it was a single step method. Precisely because it said when you prosecuted this claim, you merged these two together and you told the patent office that this, your amendment that did that, was directed to matters of form not effecting the scope of the invention.

Now you are coming in front of us and saying, trying to depart from that, that this was then and is now a four step method. That's why it's got four steps laid out in the claim that was shown in the Biogen demonstrative. The word "process" appears twice and the word "steps" appears or "step" and then alluded to multiple steps we find in the present tense.

The language of that claim is fundamentally different from the language of this claim. And thus the

response from Biogen is this, it's unremarkable in a legal instrument using different words. It effects a different result. Just like putting "not" in front of that changes the meaning of that. So Monsanto is not on point here.

I will wrap up, unless the Court has questions, with one final observation that Mr. Berl said well, there was one time back in 1978 when some institution Roswell Park, one institution actually made, there was no DNA that was before these inventions. So they were purifying it from human cells.

But, I think what we can take from that is the defendants have gone out and scoured and they can't find a single instance in history in which anyone has done something that they think would be covered by this claim. And that, in our view, your Honor, highlights exactly what the problem is. If the Court has any questions --

THE COURT: I am good. Thank you very much. Any response? Anything that anyone wants to add ?

MR. BARSKY: I will just add one thing very briefly, your Honor.

THE COURT: Sure.

MR. BARSKY: That is to follow-up on what Mr. Groombridge just said about that 2004 statement. The examiner, which if I understood the comment correctly, was that he had no issue with the examiner saying that the claims require the use of the DNA to produce recombinant polypeptide.

I think we can make a lot of progress today in this hearing if we stipulate, and we so offer right now, that the claims of the '755 patent require, as the examiner said, as Mr. Groombridge just said he has no issue with, require the use of the DNA to produce the polypeptide. I believe that would substantially advance the cause of this hearing and potentially resolve some of the issues.

THE COURT: Okay.

MR. BERL: Could I clarify one issue? Are you done, Mr. Barsky, or no?

THE COURT: Should we get a response to that?

MR. GROOMBRIDGE: Your Honor, what we are saying, if I may, I will walk across to the claim here, is this: The claim, by its very words, says in non human -- a recombinant polypeptide produced by a non human host transformed by a recombinant DNA molecule. That's a claim limitation.

We will stipulate that this is the method in which you have to employ a polypeptide made using recombinant technology in which you've manipulated a non human host to put in foreign DNA. We are fine with that. That's not going to get us anywhere because that's exactly what the defendants do, right.

What they are trying to say is you have to do that in the United States and during the term of the patent. And that we will not stipulate to.

MR. BARSKY: I haven't addressed any of that. I actually just offered a stipulation to what the examiner said. And I think the answer we just got was no from Biogen.

THE COURT: I think that's right. In terms of any stipulations, though, to be serious about it, we do have issues with respect to the terms anyway. So you folks are going to be speaking. And if there are issues that come to light after this, after people are contemplating what went on today, if you can reach common ground on anything, obviously that is of assistance to the Court.

MR. BERL: Two very quick points, your Honor, in one minute. One of them is responsive to the question that you asked. If Taniguchi got the patent to DNA sequences, is that somehow inconsistent with this process being part of claim one. The answer to that is no.

If someone gets a claim to a new kind of tire with vulcanized rubber and they patent that, someone else can come along and patent a method of driving a car very fast using that vulcanized rubber tire as a limitation of that claim. There is no conflict there between the two. This is just an element or a limitation of the broader claim. The broader claim recites a method.

The second thing is with respect to Monsanto. The distinction I just heard is that in Monsanto, it recites a second process, that is a process of obtaining the transgenic

plant that's used in the process. There has been no dispute here, as far as I have heard today from the tutorials, to the moment I am speaking now, that producing from a non human host transformed by a recombinant DNA molecule is in fact a process of preparing a recombinant polypeptide.

The dispute is whether it's limited. But, it's clearly a process. It's clearly recited in the claim. So this claim likewise recites a method for immunomodulation by administering, and then another process, producing a recombinant polypeptide from a non human host transformed by a recombinant DNA molecule. In that sense, like every other, we submit, this claim is just like the Monsanto claim addressed by the federal Circuit and should be treated in the same way. Thank you, your Honor.

THE COURT: Thank you. Anyone else? Anything else? No.

Okay. Well, we are going to go off the record just for one moment.

(Discussion off the record)

THE COURT: Does anyone have anything?

MR. BARSKY: May I just say thank you. I am sure I speak for all concerned.

THE COURT: I would like to thank everyone.

MR. BARSKY: Particularly the Court's staff and your Honor for enduring us today.

THE COURT: Thank you very much. Again I really appreciate all the work that went into this and it was very very helpful today. I know we had a long day and certain people missed their flights. But, I do sincerely appreciate the time and effort that everyone put into this. And I think your efforts will be well served. We will take a look at this and we will provide you with a decision.

But, in the meantime, I urge you to follow the path which I previously discussed and you could get back to me with respect to whether there is any interest in terms of mediation.

Again, thank you very much. Be well everyone. Take care.

(Whereupon the matter was concluded)